

KIC 007041856

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007041856-01	OBS	No	4.000645	134.708775	62.1	5.850	16.0	13.4	2.99	6908	3.16	5810.19
007041856-02	OBS	No	4.000334	133.783747	1.9	1.873	11.5	0.4	2.99	6908	0.41	5810.79
007041856-03	OBS	No	4.000424	134.162616	42.2	5.245	11.4	11.4	2.99	6908	2.27	5810.62
007041856-04	OBS	No	410.614935	301.222063	295.6	4.521	7.1	7.5	2.99	6908	6.11	12.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007041856-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007041856-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
007041856-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
007041856-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

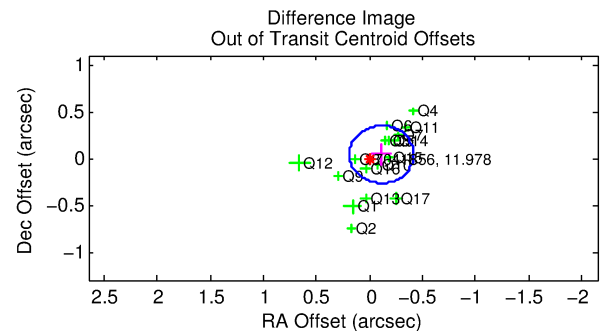
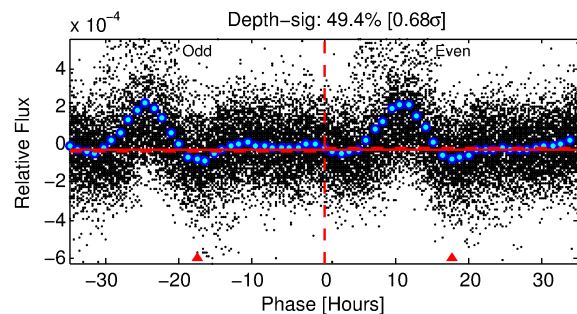
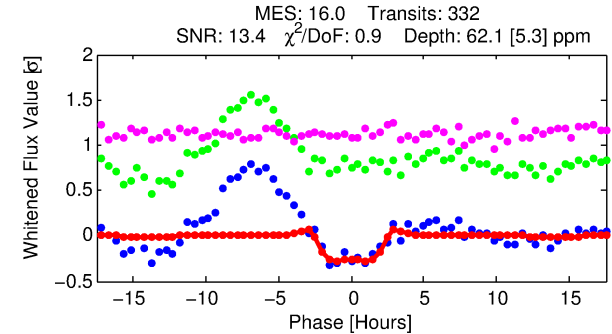
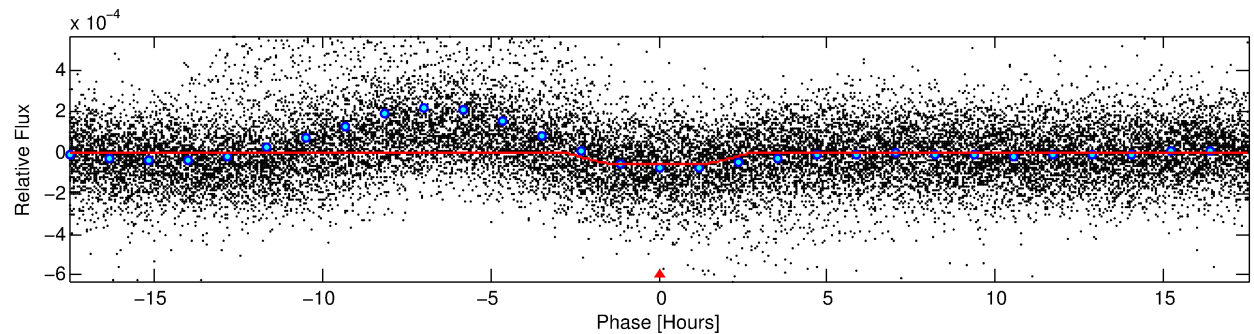
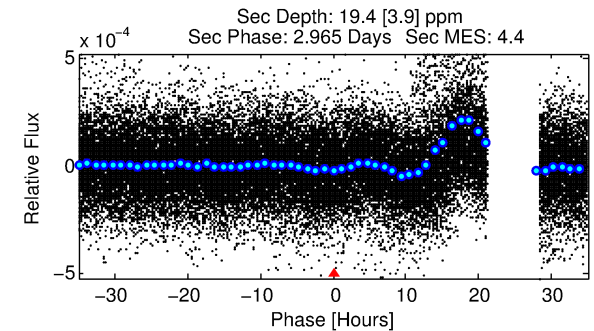
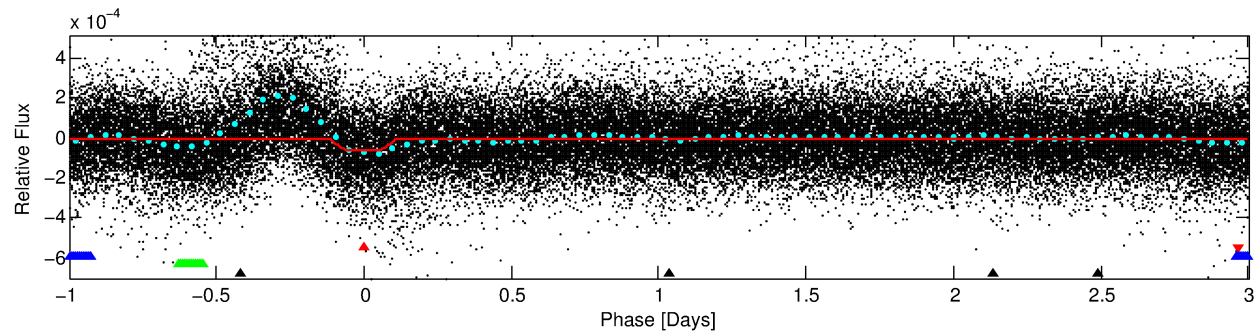
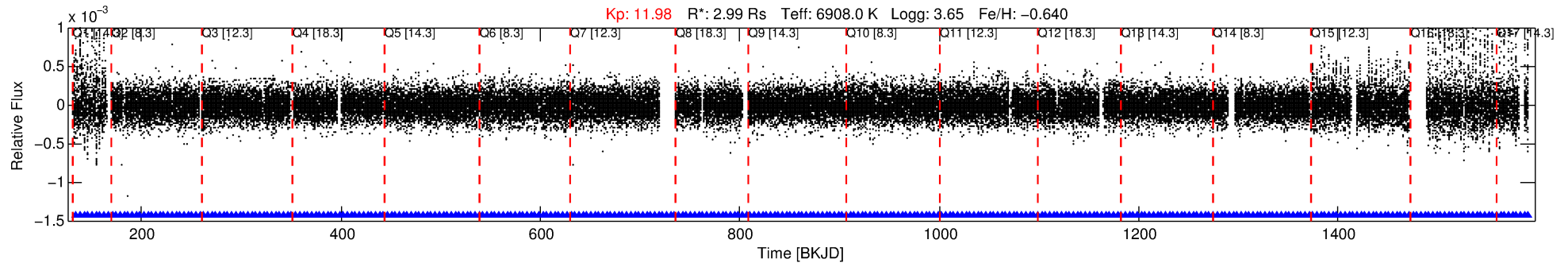
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007041856-01

No Significant Match Found

DV One-Page Summary

KIC: 7041856 Candidate: 1 of 4 Period: 4.001 d



DV Fit Results:

Period = 4.00065 [0.00003] d
Epoch = 134.7088 [0.0064] BKJD
Rp/R* = 0.0097 [0.0005]
a/R* = 1.51 [0.10]
b = 0.99 [0.00]
Seff = 5810.19 [3347.15]
Teq = 2226 [321] K
Rp = 3.16 [1.18] Re
a = 0.0560 [0.0198] AU
Ag = 3.36 [2.04] [1.16σ]
Teffp = 4659 [296] K [5.58σ]

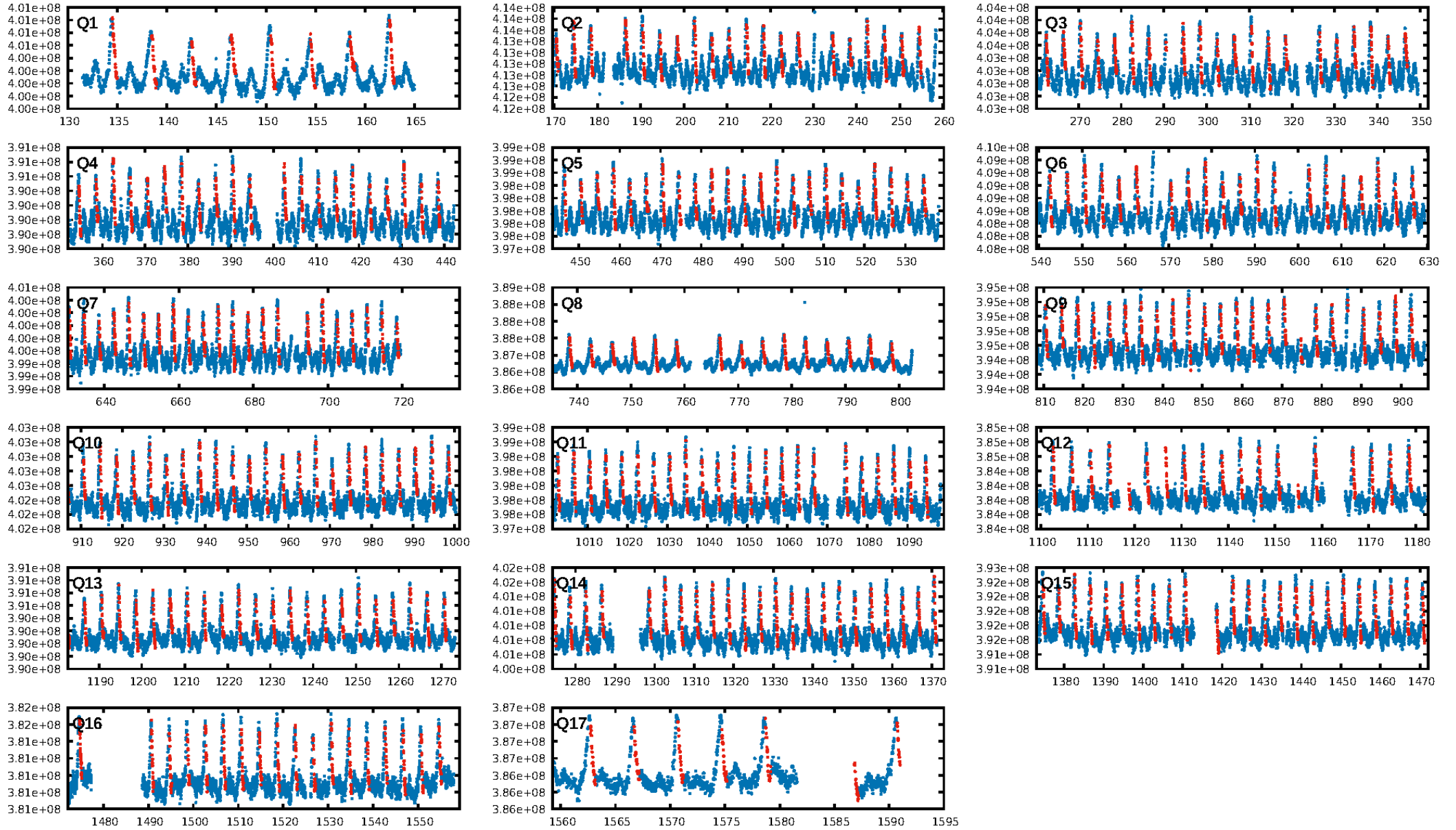
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [1319.92σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.58e-41
RollingBand-fgt: 1.00 [317/317]
GhostDiagnostic-chr: 2.094
Centroid-sig: 0.2%
Centroid-so: 0.585 arcsec [2.34σ]
OotOffset-rm: 0.119 arcsec [1.16σ]
KicOffset-rm: 0.056 arcsec [0.55σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.35 [6/17]

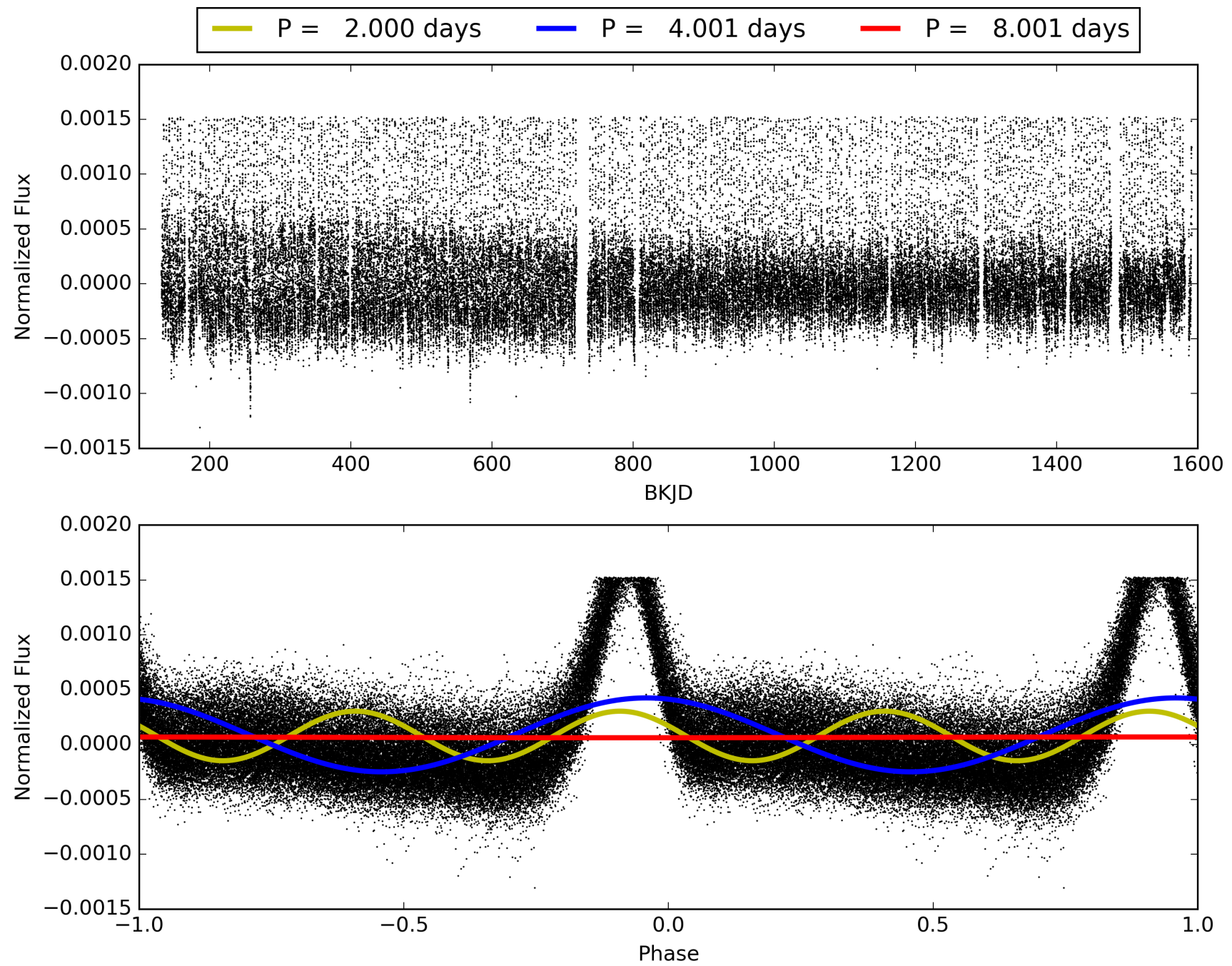
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:14:40 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007041856-01, PDC Light Curves

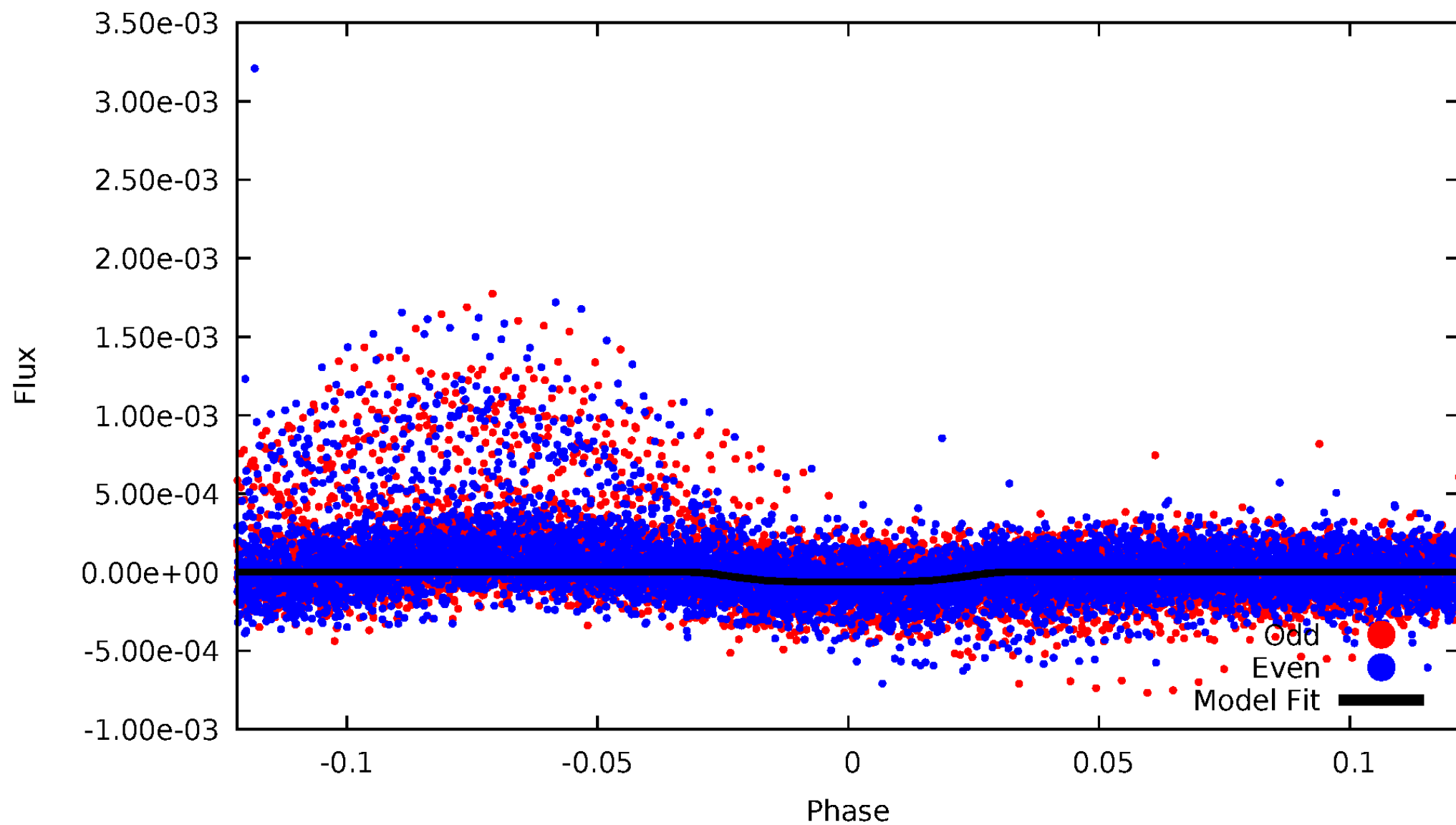


TCE 007041856-01



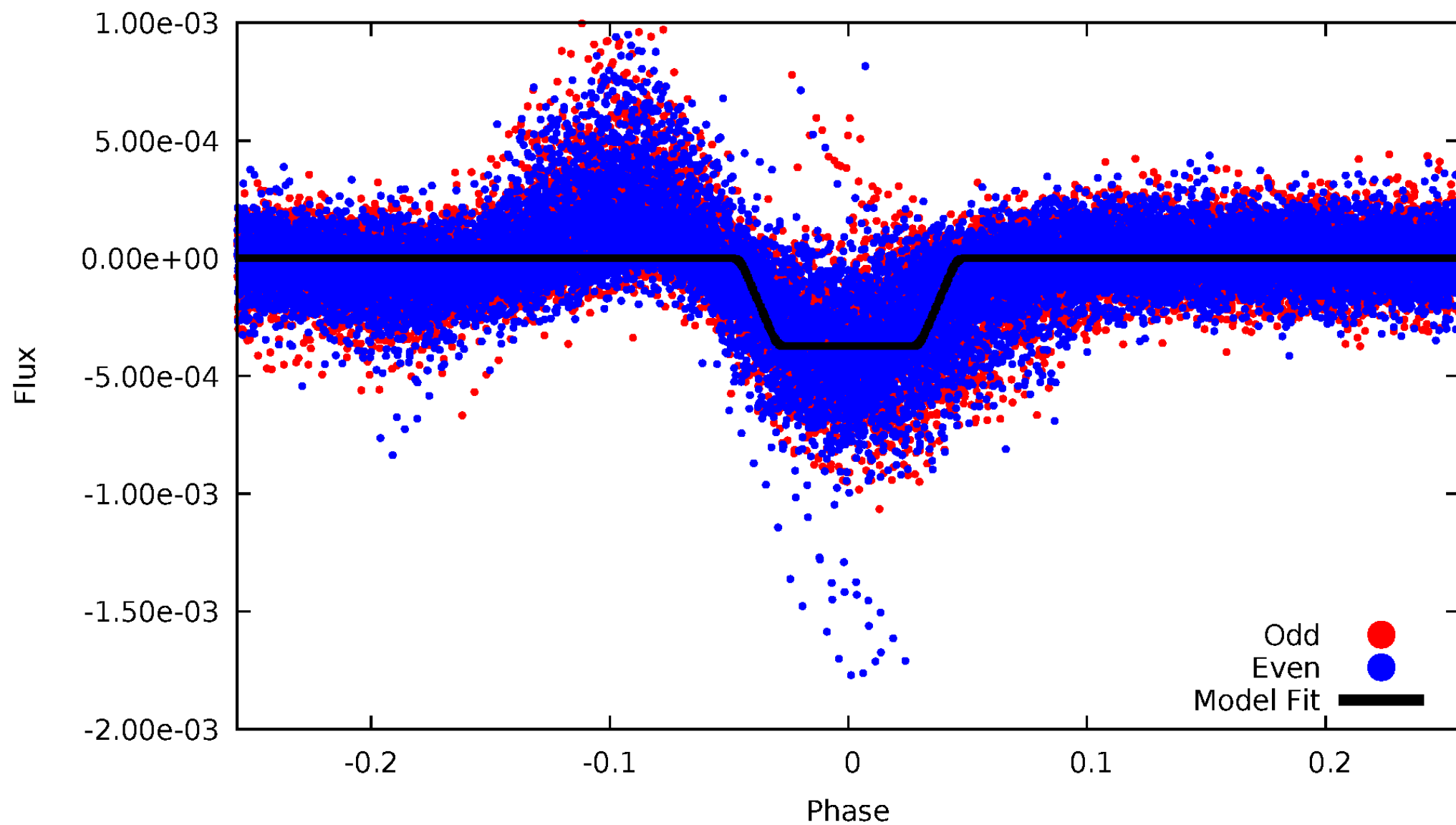
DV Odd/Even

TCE 007041856-01



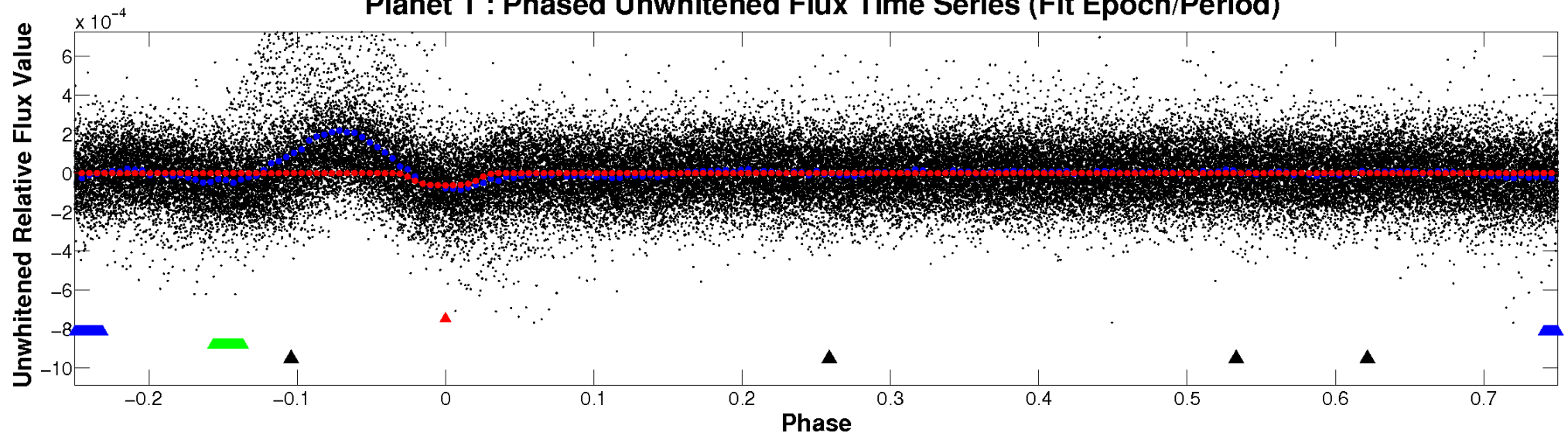
ALT Odd/Even

TCE 007041856-01

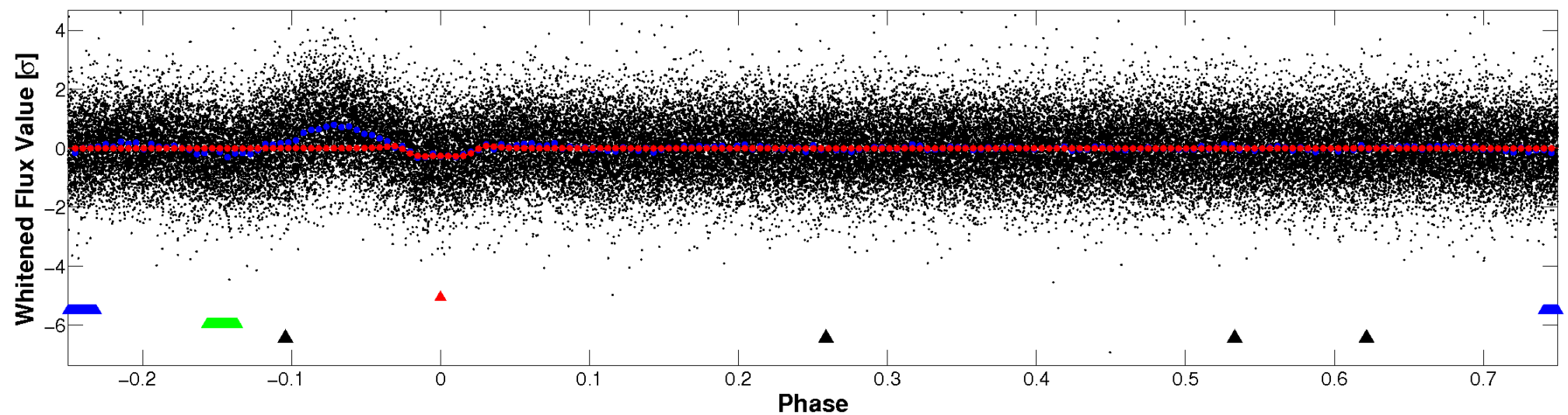


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

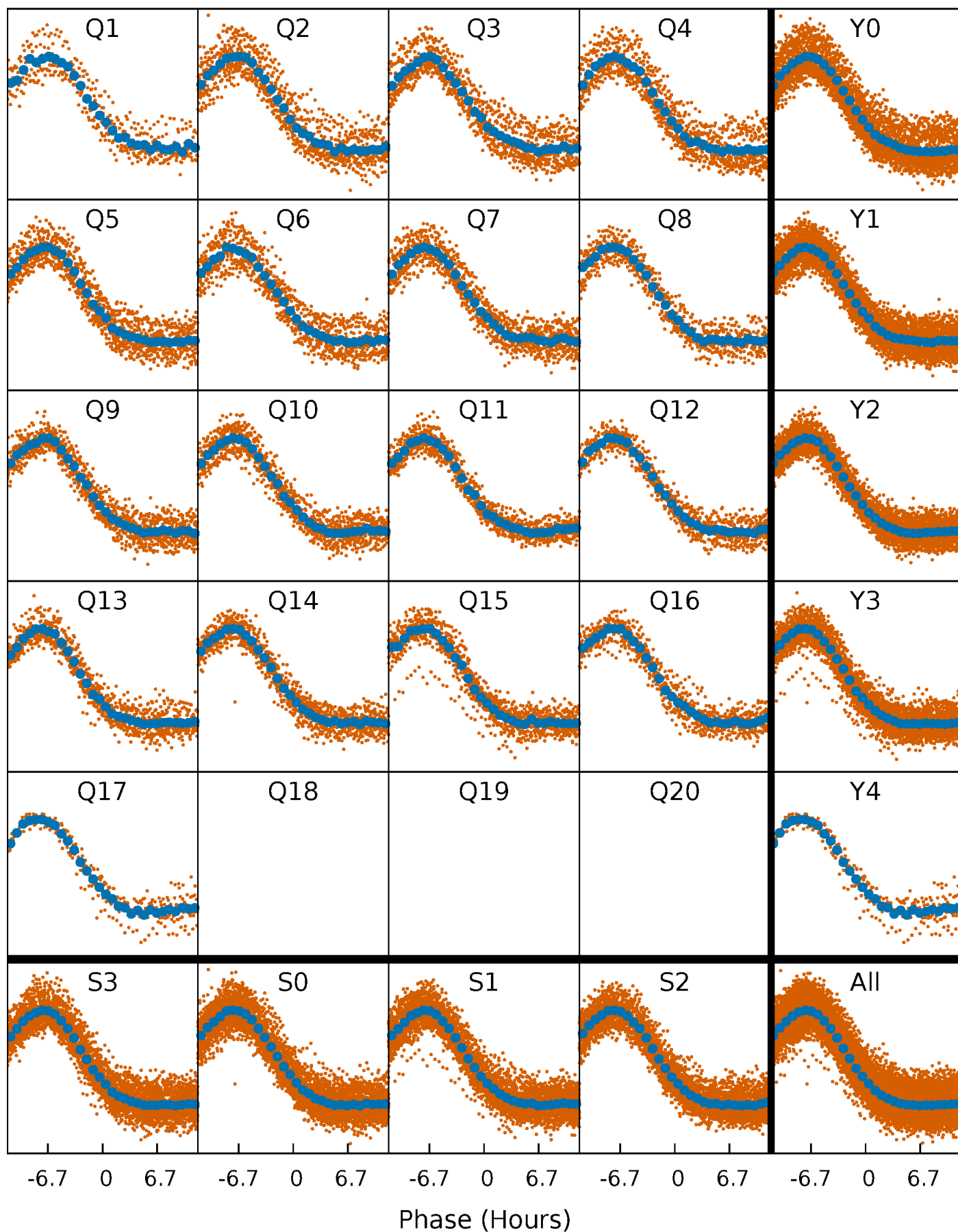


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



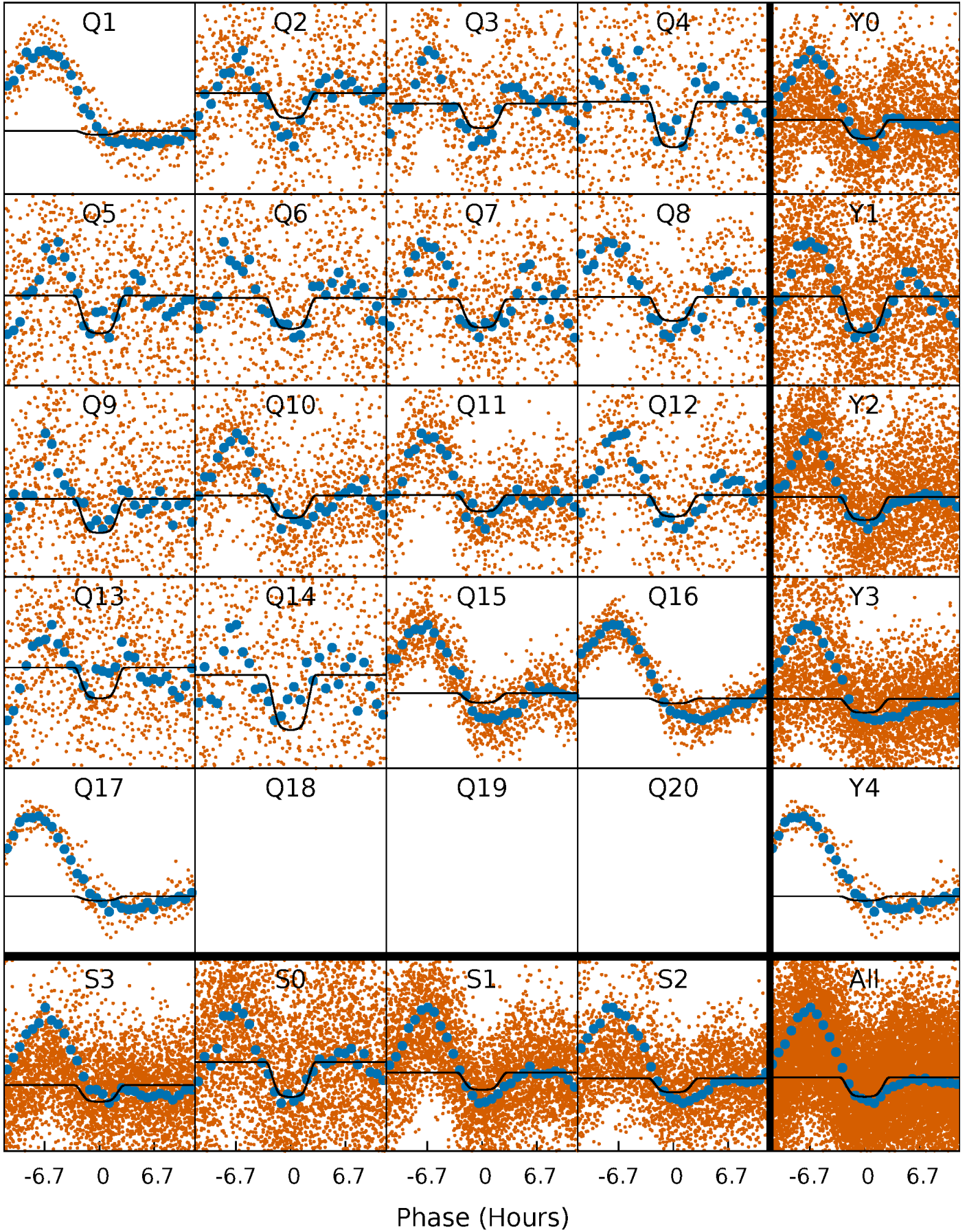
PDC Quarter-Phased Transit Curves

TCE 007041856-01 P= 4.000645 Days $T_0=134.708775$ (BKJD)



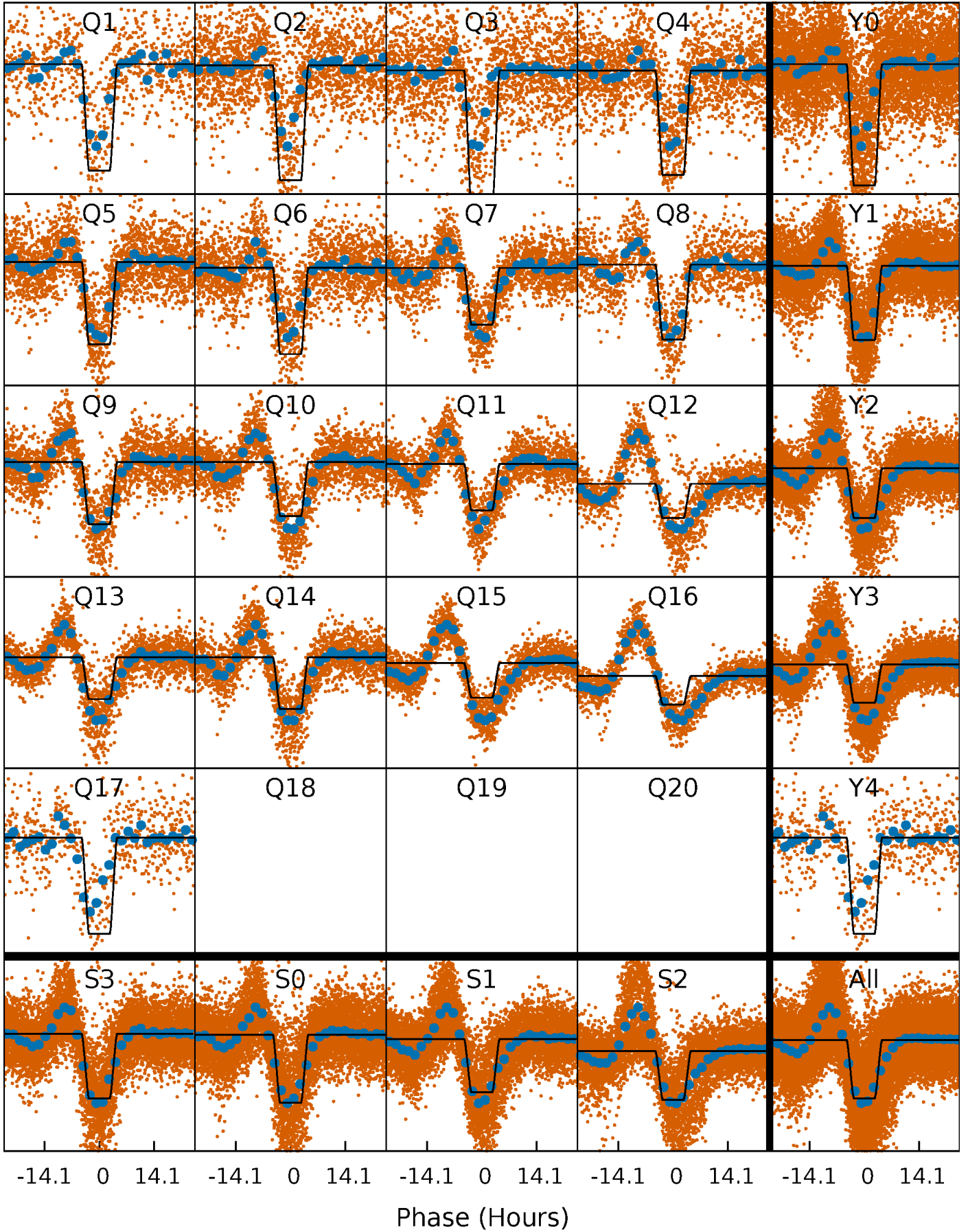
DV Quarter-Phased Transit Curves

TCE 007041856-01 P= 4.000645 Days $T_0=134.708775$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

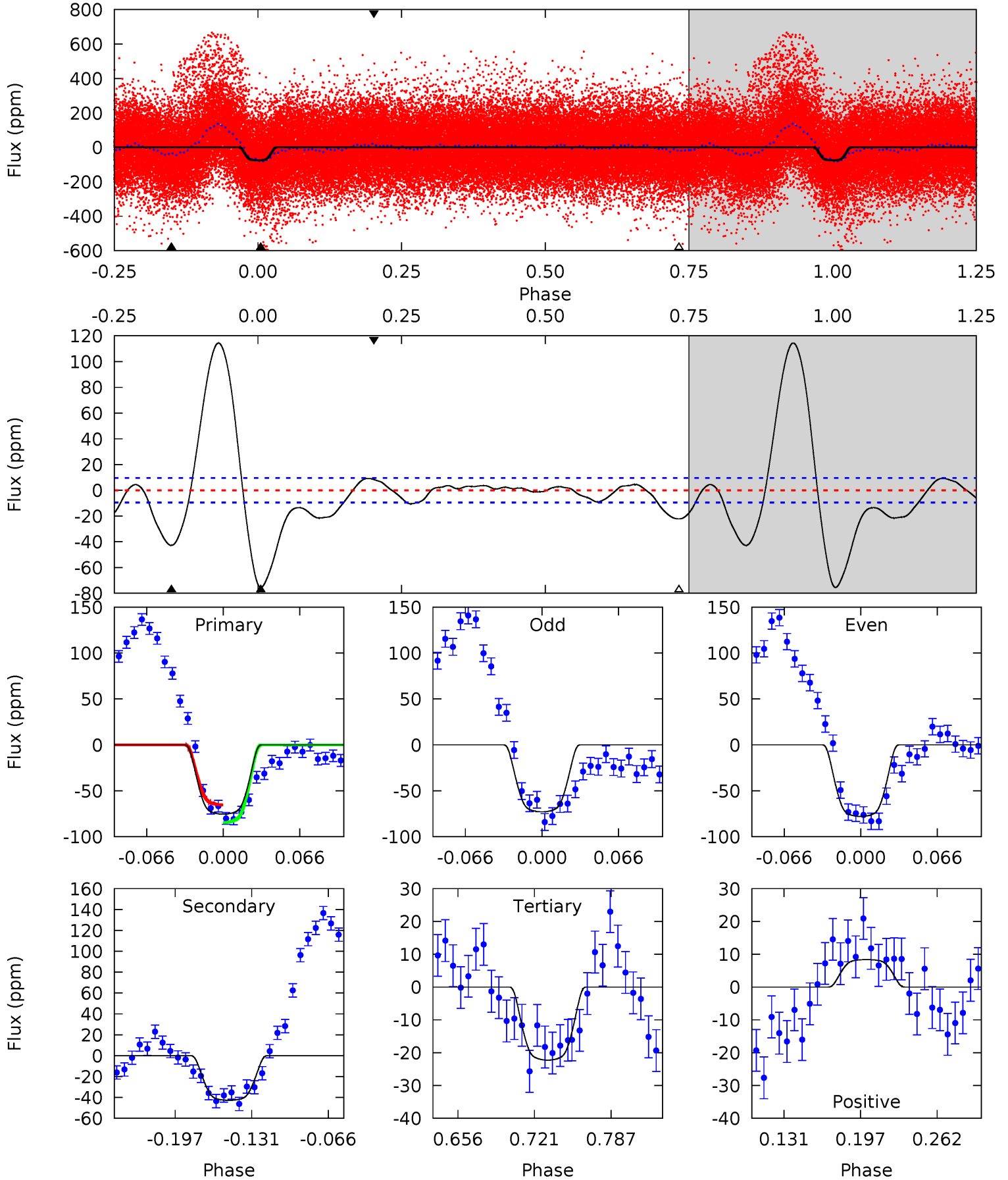
TCE 007041856-01 P= 4.000675 Days $T_0=134.754116$ (BKJD)



DV Model-Shift Uniqueness Test

007041856-01, P = 4.000645 Days, E = 130.708130 Days

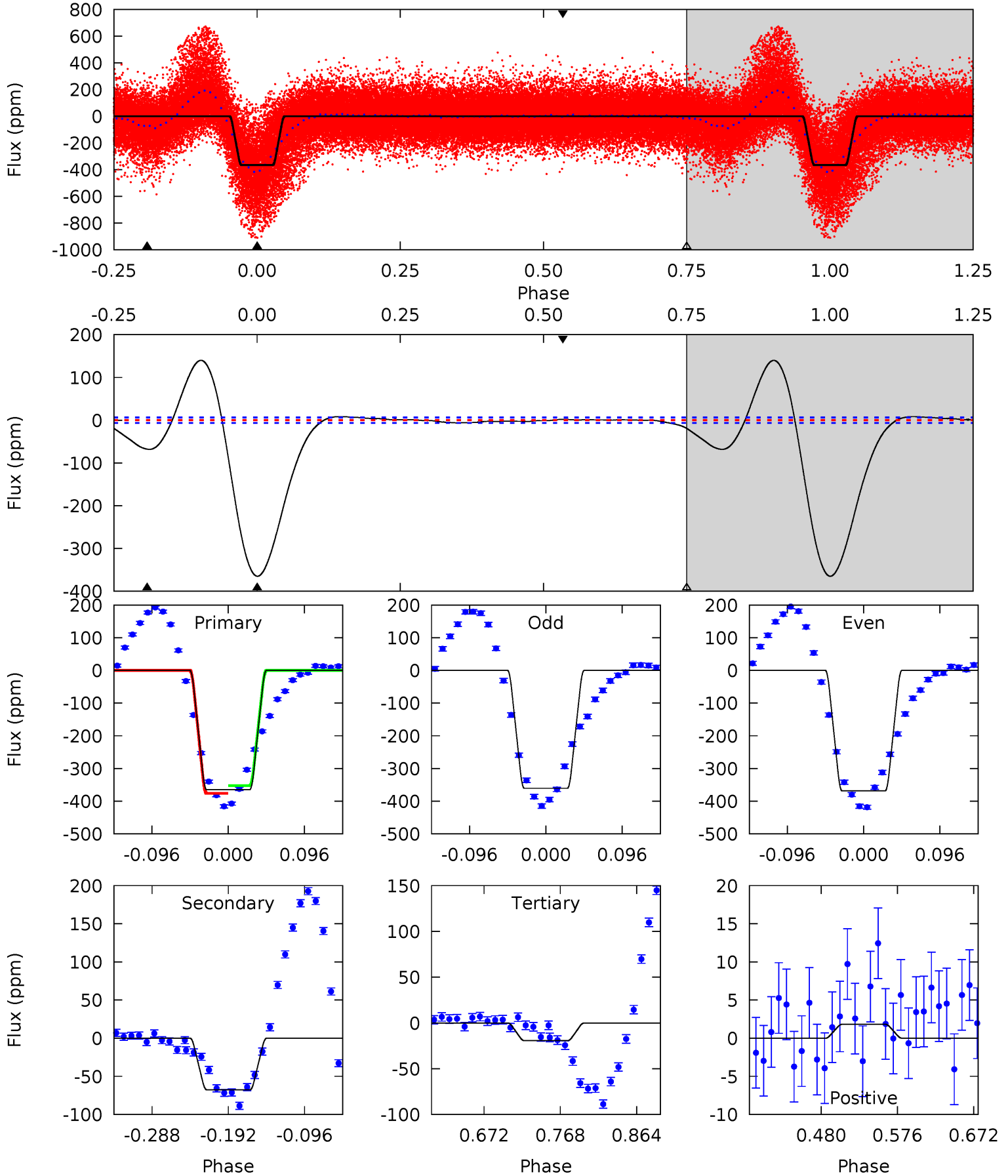
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.9	20.9	10.9	4.09	4.65	1.84	10.2	26.0	32.8	10.0	16.8	1.24	0.98	0.60	4.61



Alt Model-Shift Uniqueness Test

007041856-01, P = 4.000675 Days, E = 130.753441 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
260.4	48.3	13.8	1.30	4.57	1.66	3.94	246.6	259.1	34.5	47.0	2.74	1.02	0.28	7.51



Stellar Parameters For KIC 007041856

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6908^{+183}_{-204}	$3.652^{+0.330}_{-0.110}$	$-0.640^{+0.350}_{-0.300}$	$2.986^{+0.475}_{-1.109}$	$1.460^{+0.216}_{-0.324}$	$0.077^{+0.202}_{-0.021}$
	+3%/-3%	+9%/-3%	+55%/-47%	+16%/-37%	+15%/-22%	+262%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007041856-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-43 ± 2	$3.11^{+0.40}_{-0.66}$	3074^{+163}_{-300}	5624^{+190}_{-202}	$7.785^{+4.054}_{-1.604}$
Alt.	-68 ± 1	$6.23^{+0.73}_{-1.29}$	3072^{+199}_{-311}	4547^{+117}_{-112}	$3.054^{+1.465}_{-0.567}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

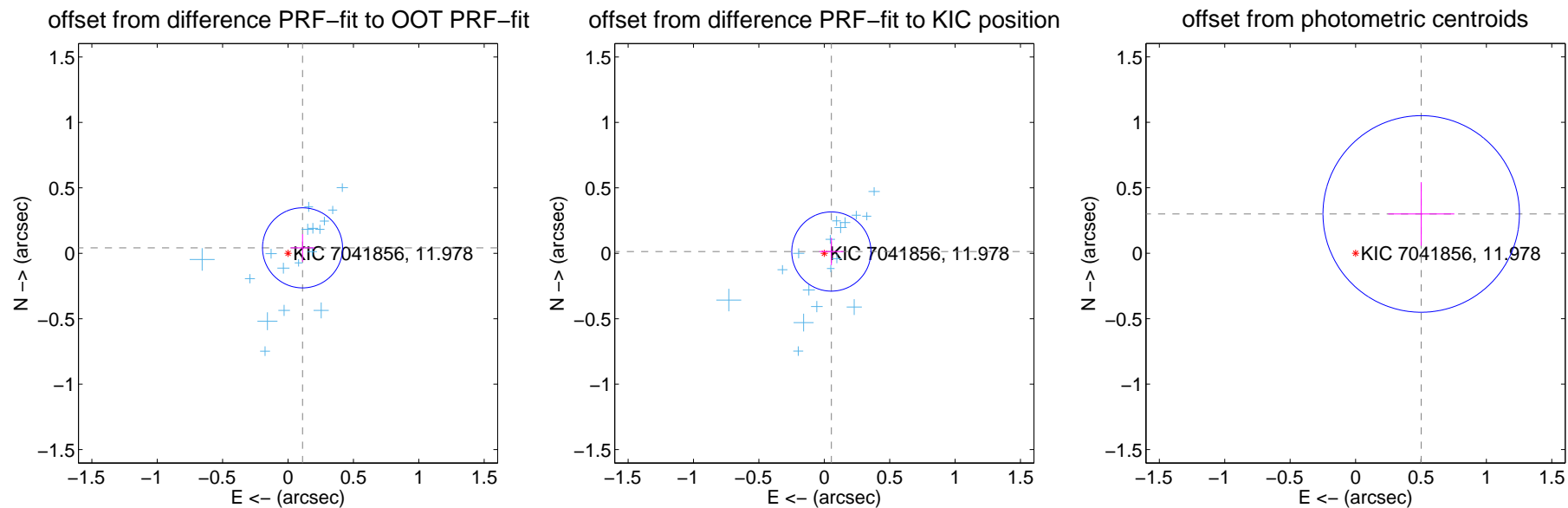
DV Centroid Data

Supplemental centroid analysis for 007041856-01. **Kepler magnitude: 11.98.** Transit SNR 13.43

There are 17 quarters with good PRF difference image offsets

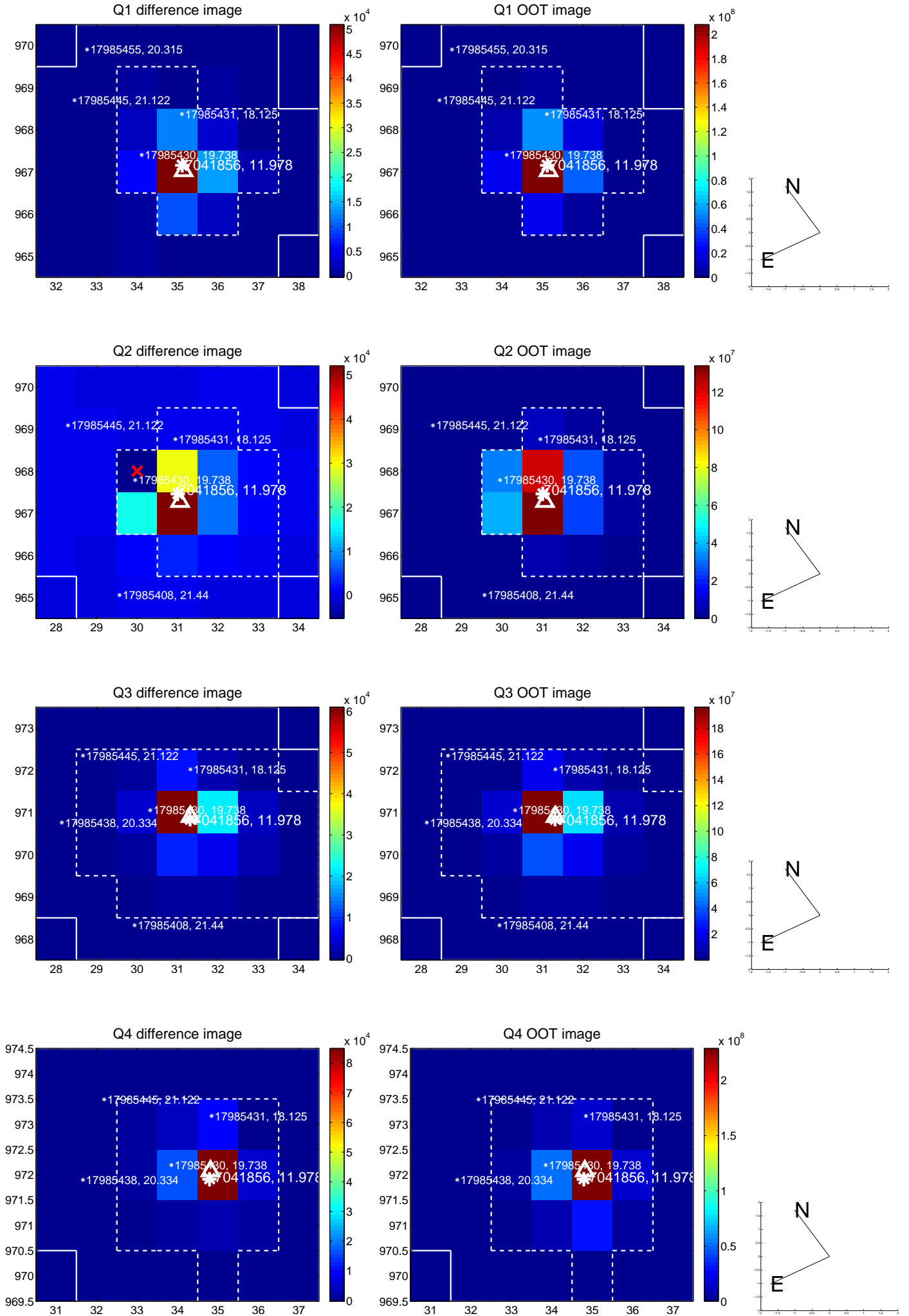
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.119 ± 0.102	1.16	-0.111 ± 0.092	0.042 ± 0.105
PRF-fit source offset from KIC position	0.056 ± 0.101	0.55	-0.054 ± 0.092	0.013 ± 0.104
photometric centroid source offset	0.58 ± 0.25	2.34	-0.50 ± 0.25	0.30 ± 0.24

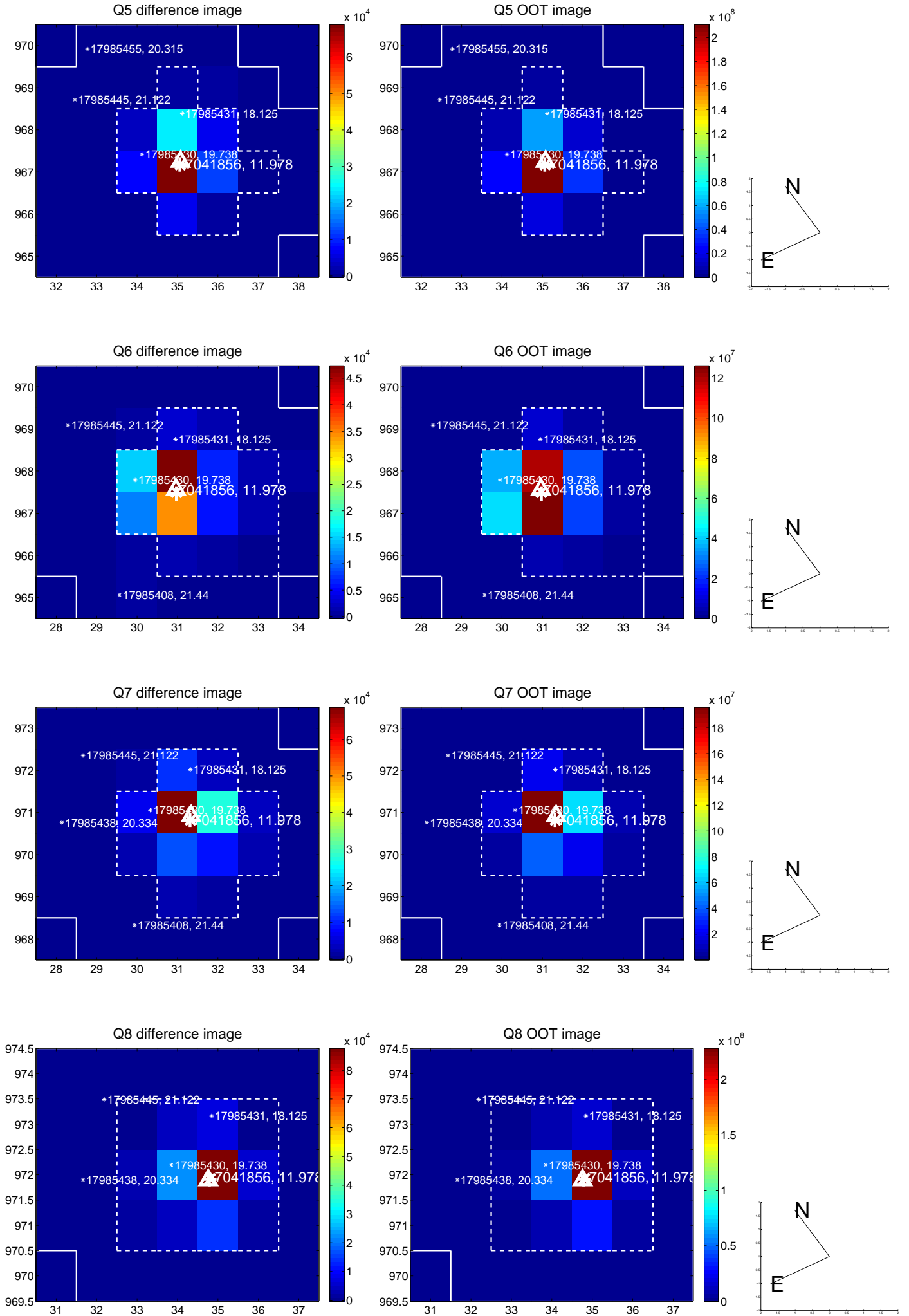


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

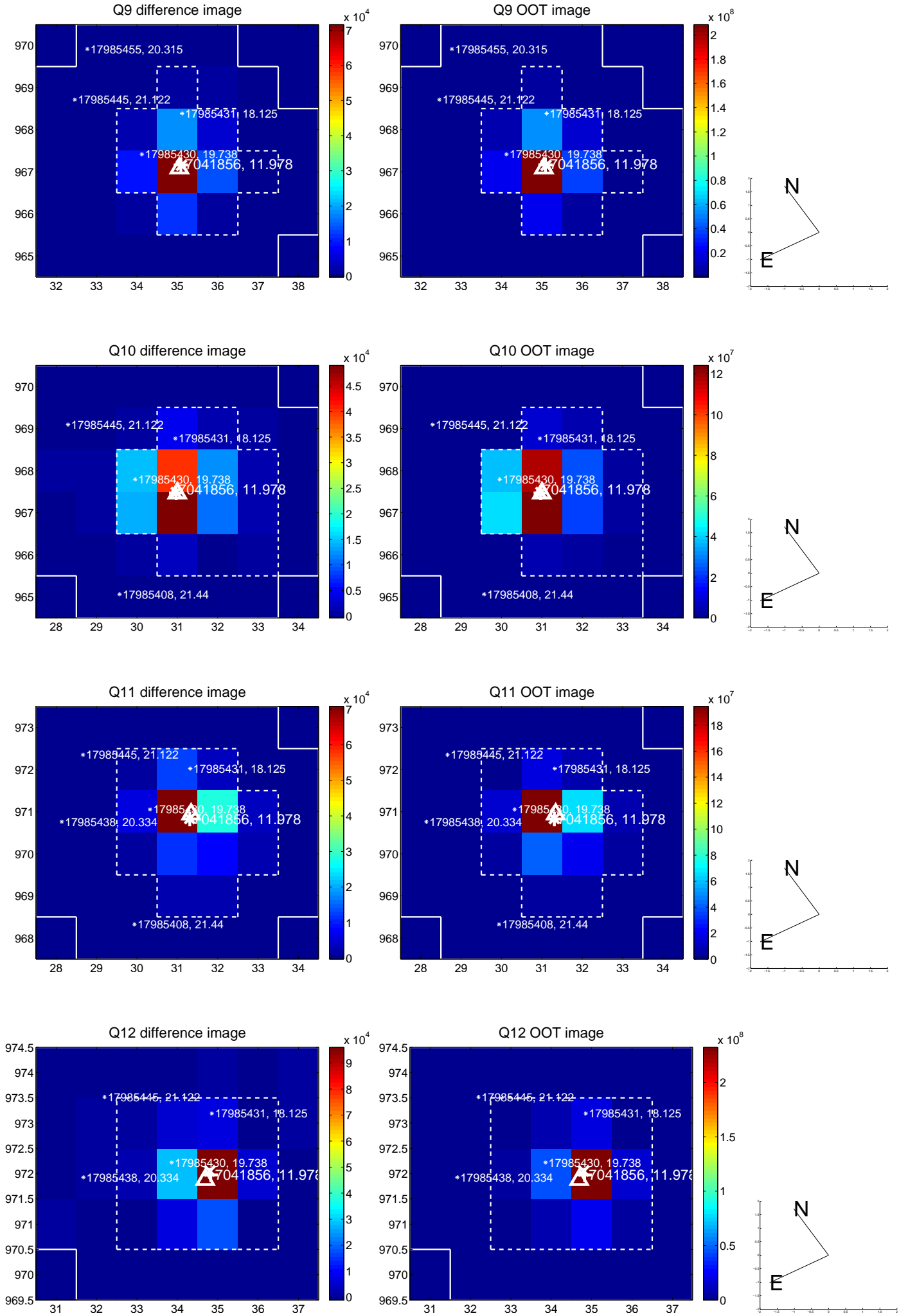
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



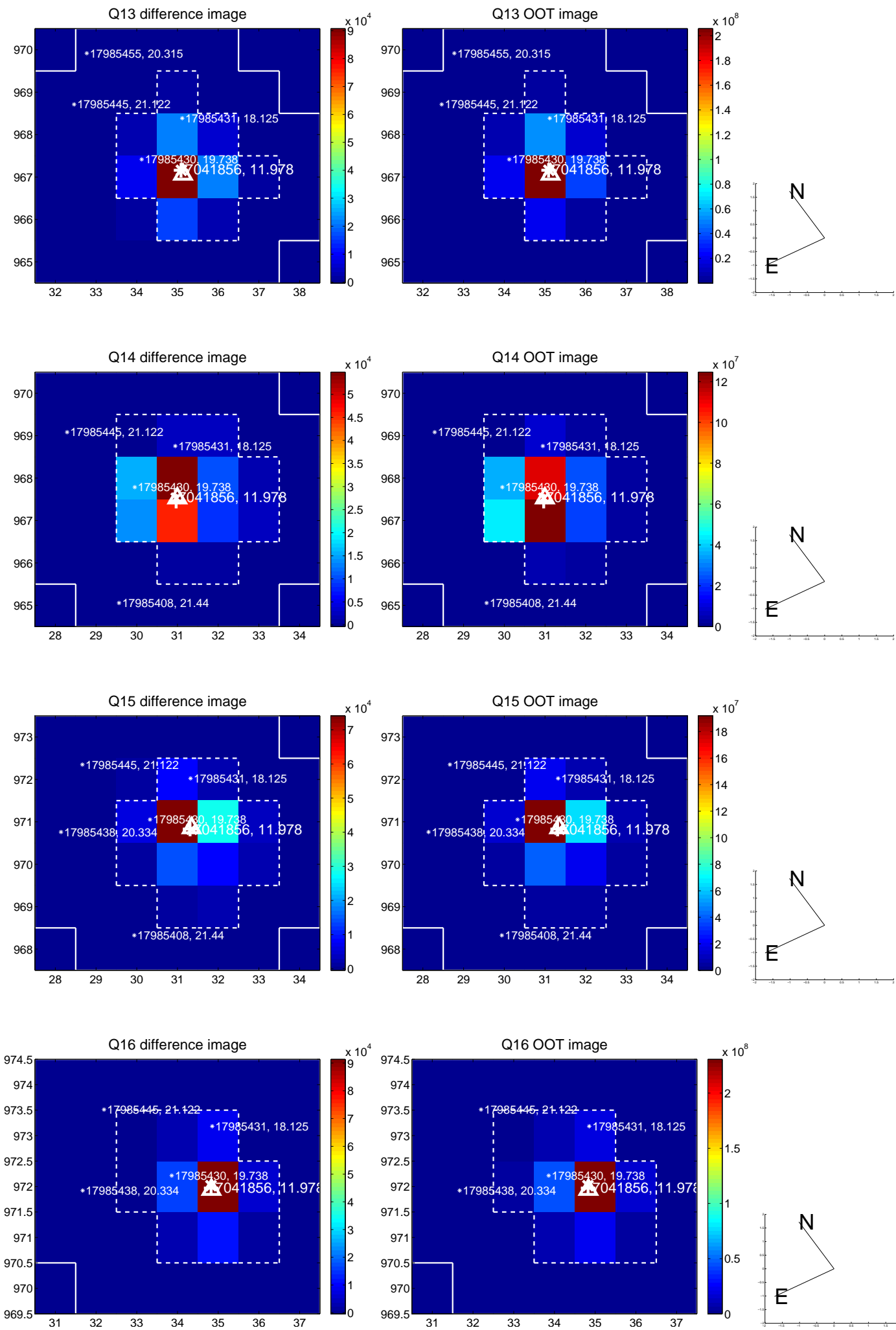
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



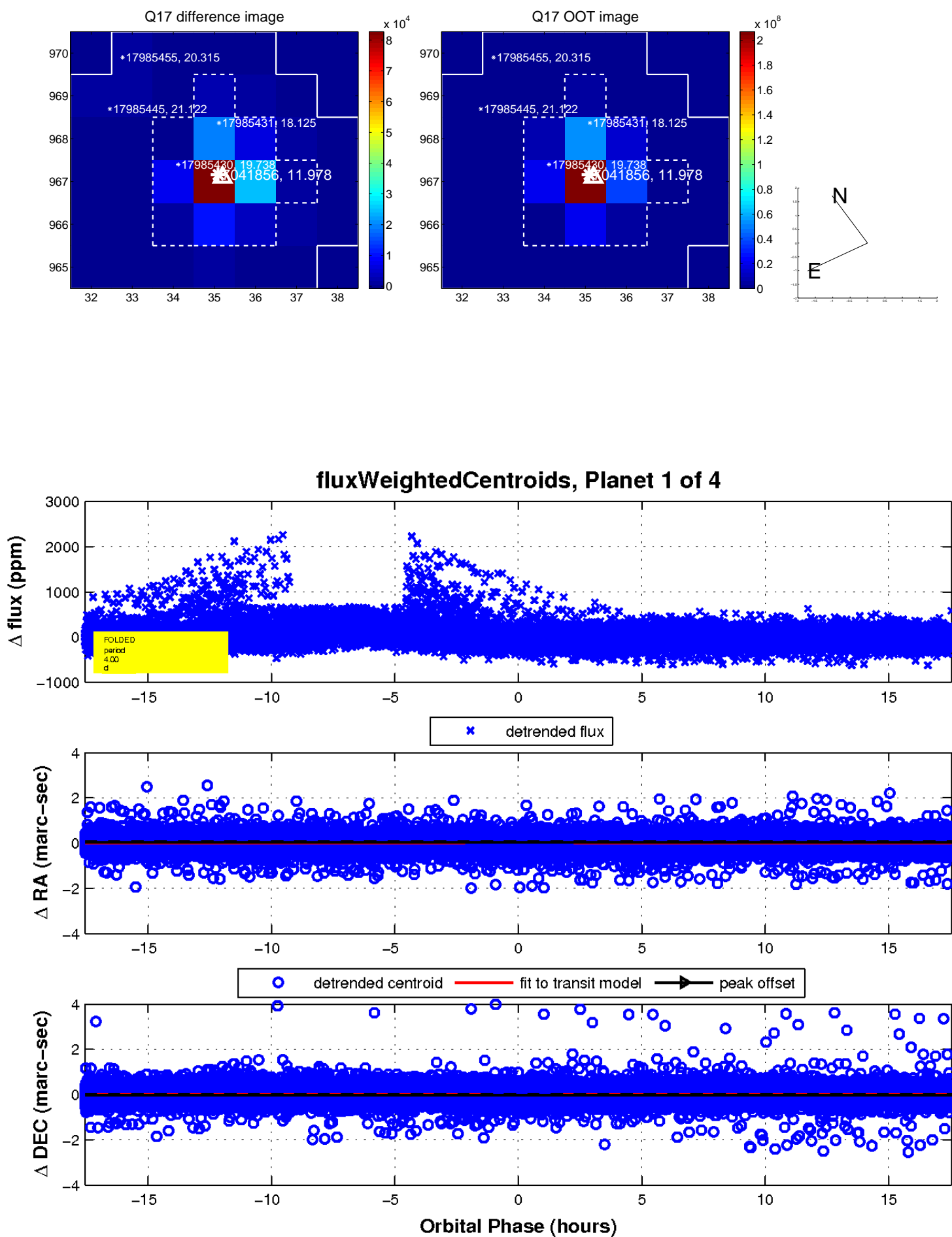
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

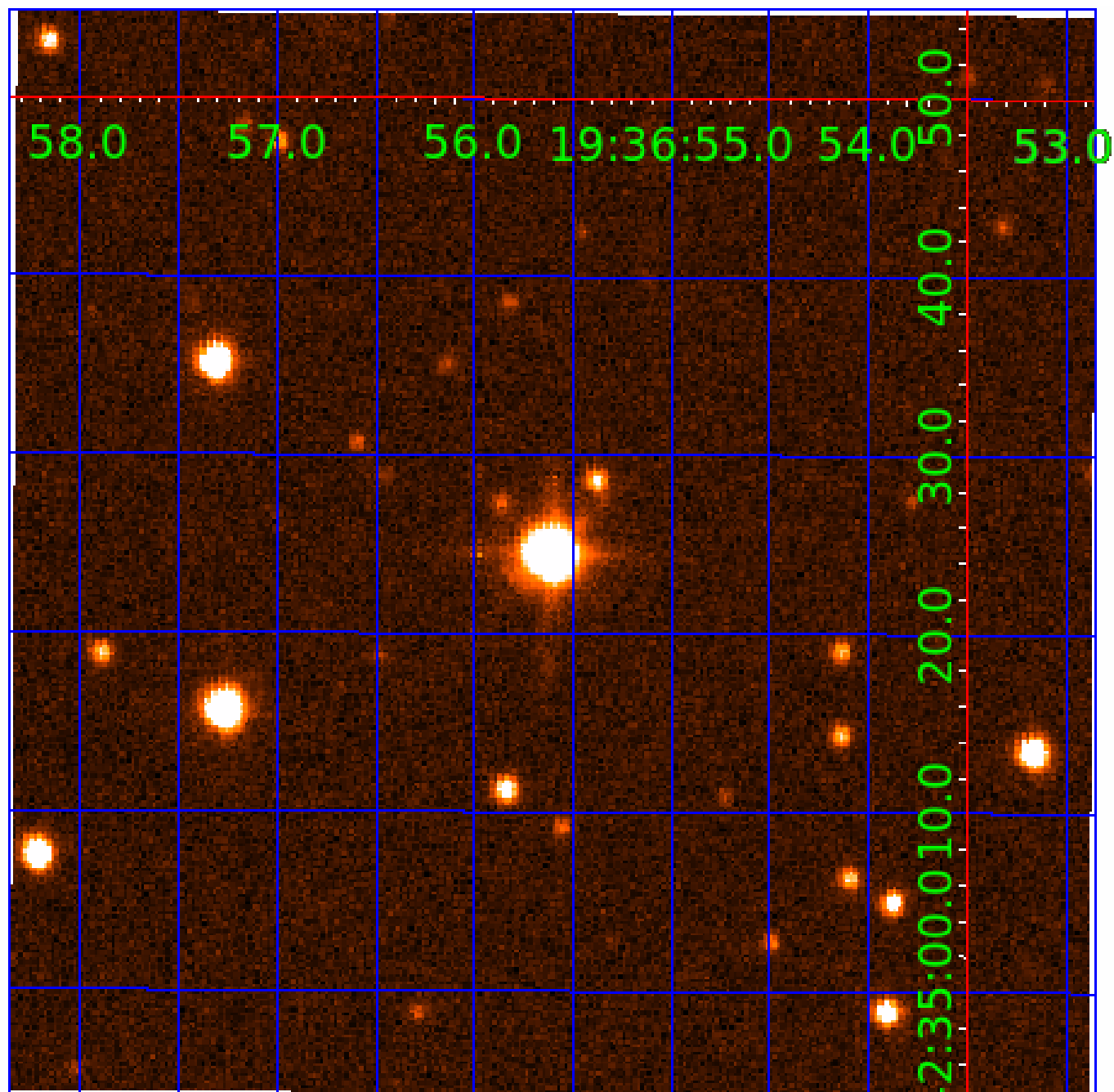


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007041856

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007041856-01	OBS	No	4.000645	134.708775	62.1	5.850	16.0	13.4	2.99	6908	3.16	5810.19
007041856-02	OBS	No	4.000334	133.783747	1.9	1.873	11.5	0.4	2.99	6908	0.41	5810.79
007041856-03	OBS	No	4.000424	134.162616	42.2	5.245	11.4	11.4	2.99	6908	2.27	5810.62
007041856-04	OBS	No	410.614935	301.222063	295.6	4.521	7.1	7.5	2.99	6908	6.11	12.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007041856-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007041856-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
007041856-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
007041856-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

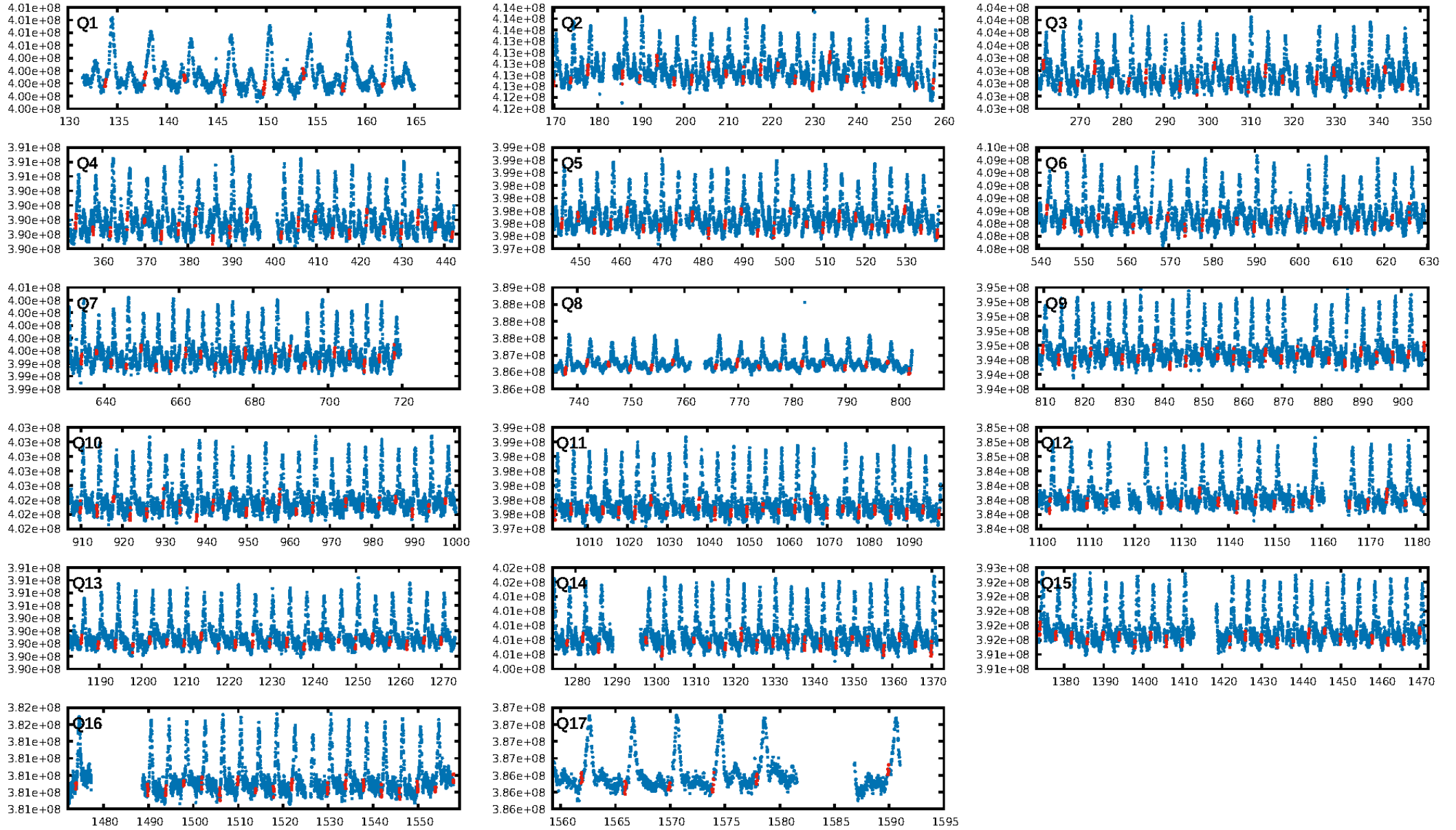
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007041856-02

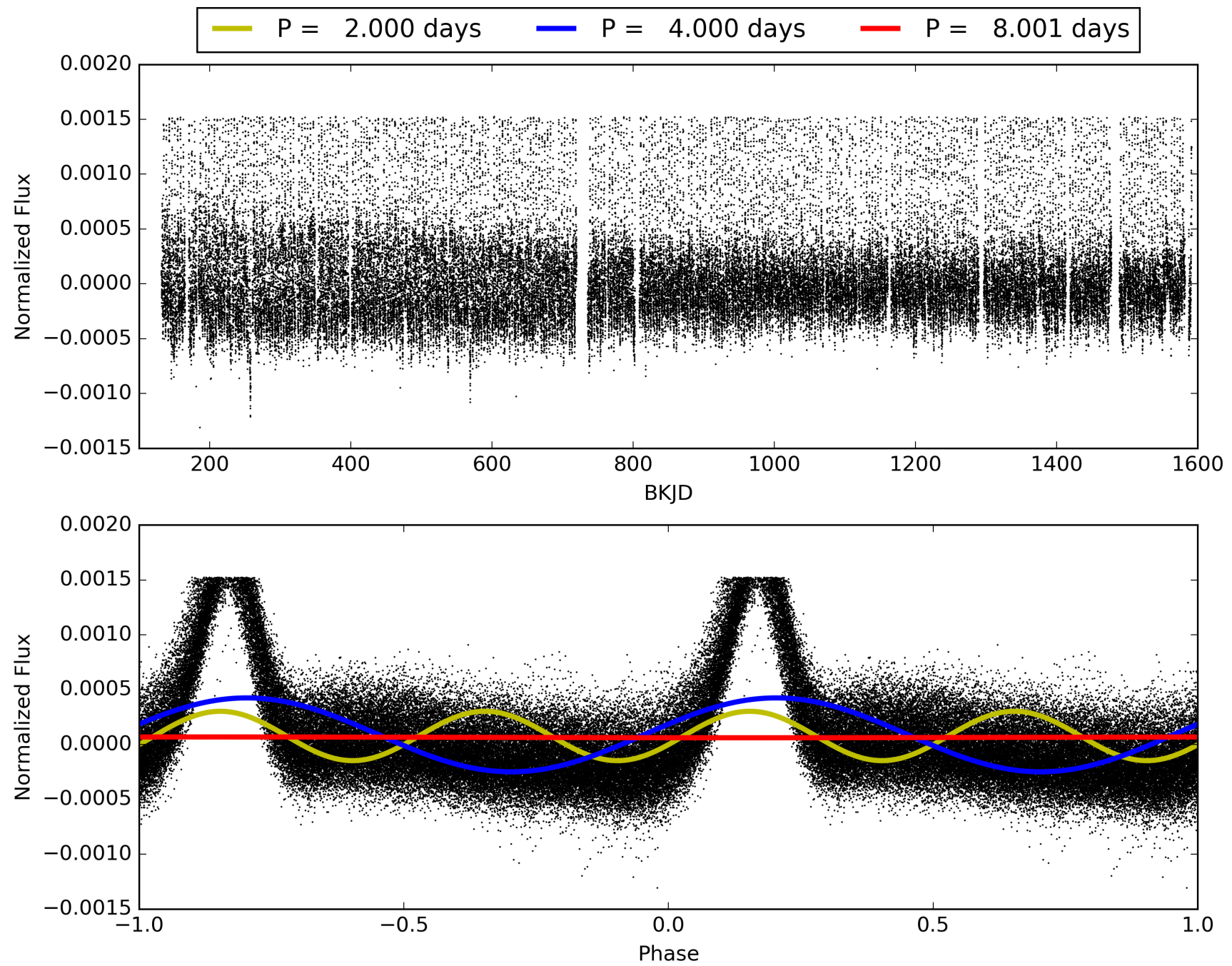
No Significant Match Found

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007041856-02, PDC Light Curves

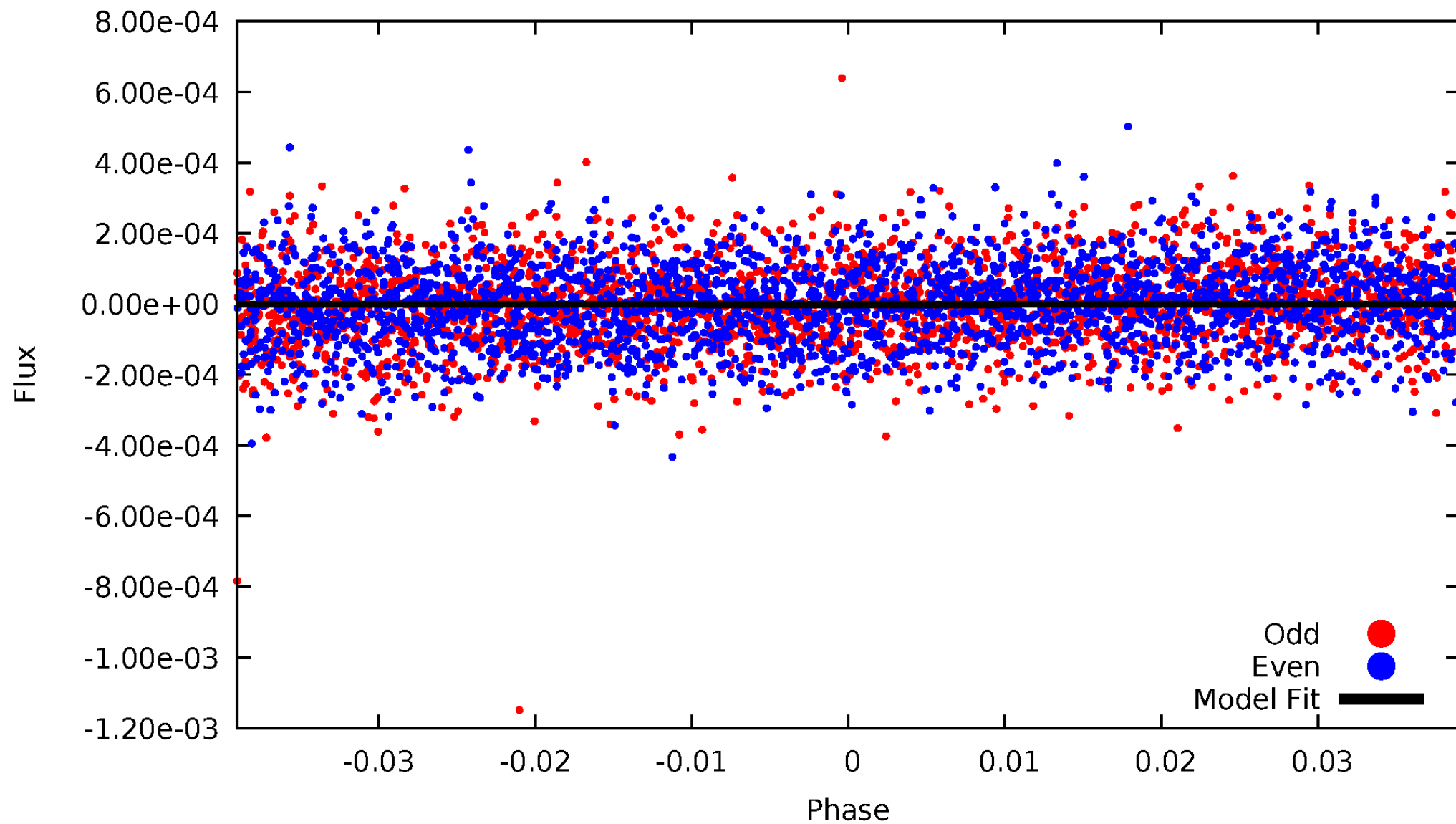


TCE 007041856-02



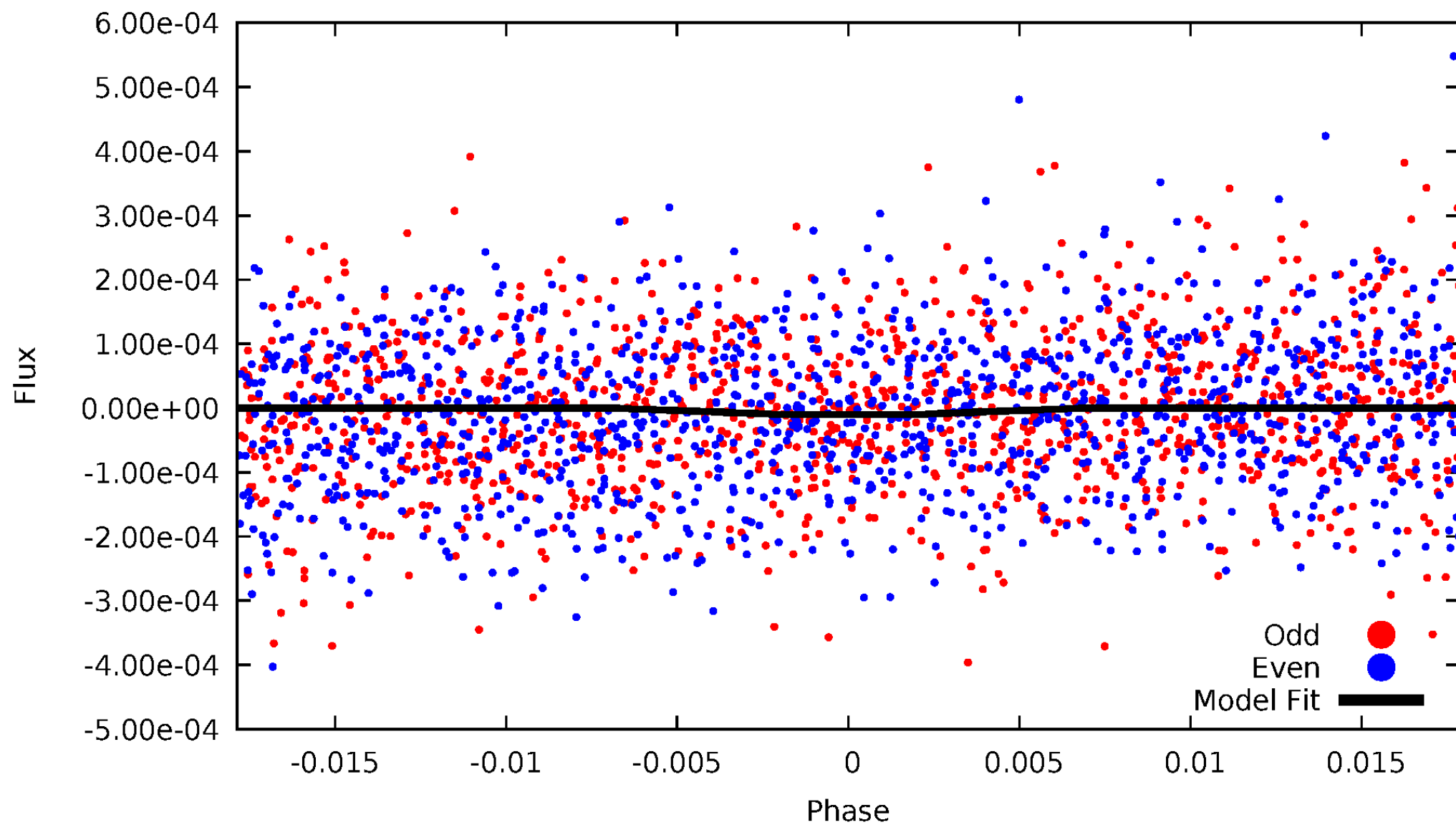
DV Odd/Even

TCE 007041856-02



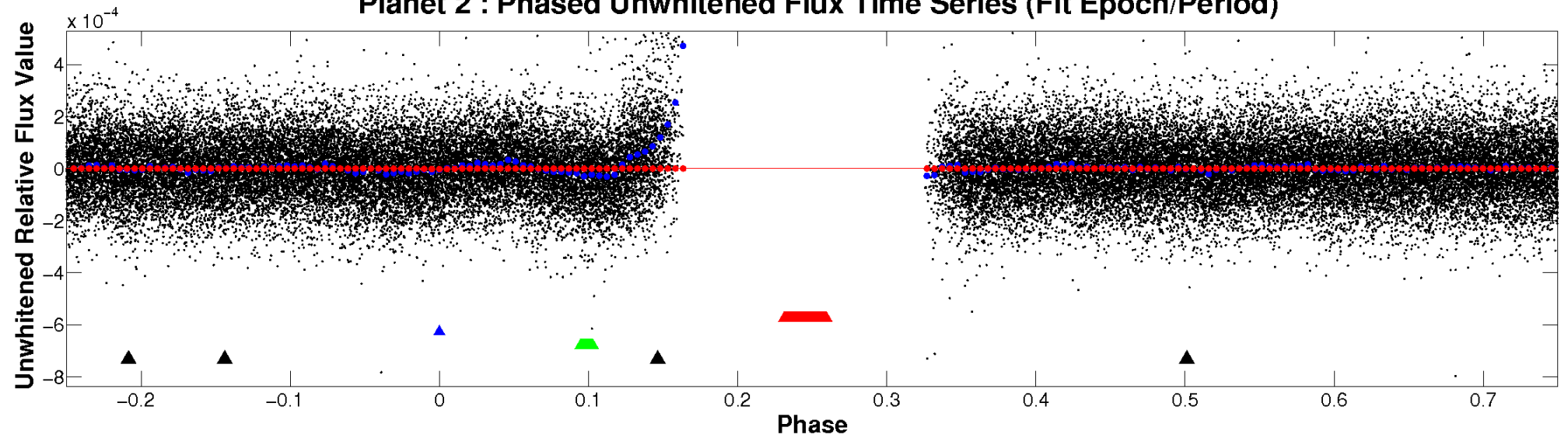
ALT Odd/Even

TCE 007041856-02

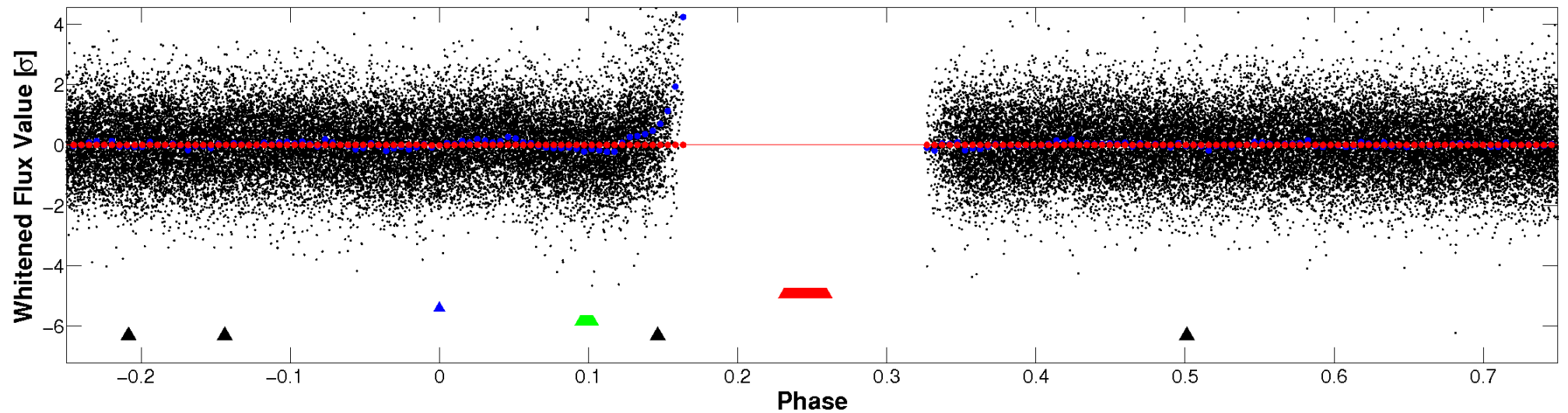


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

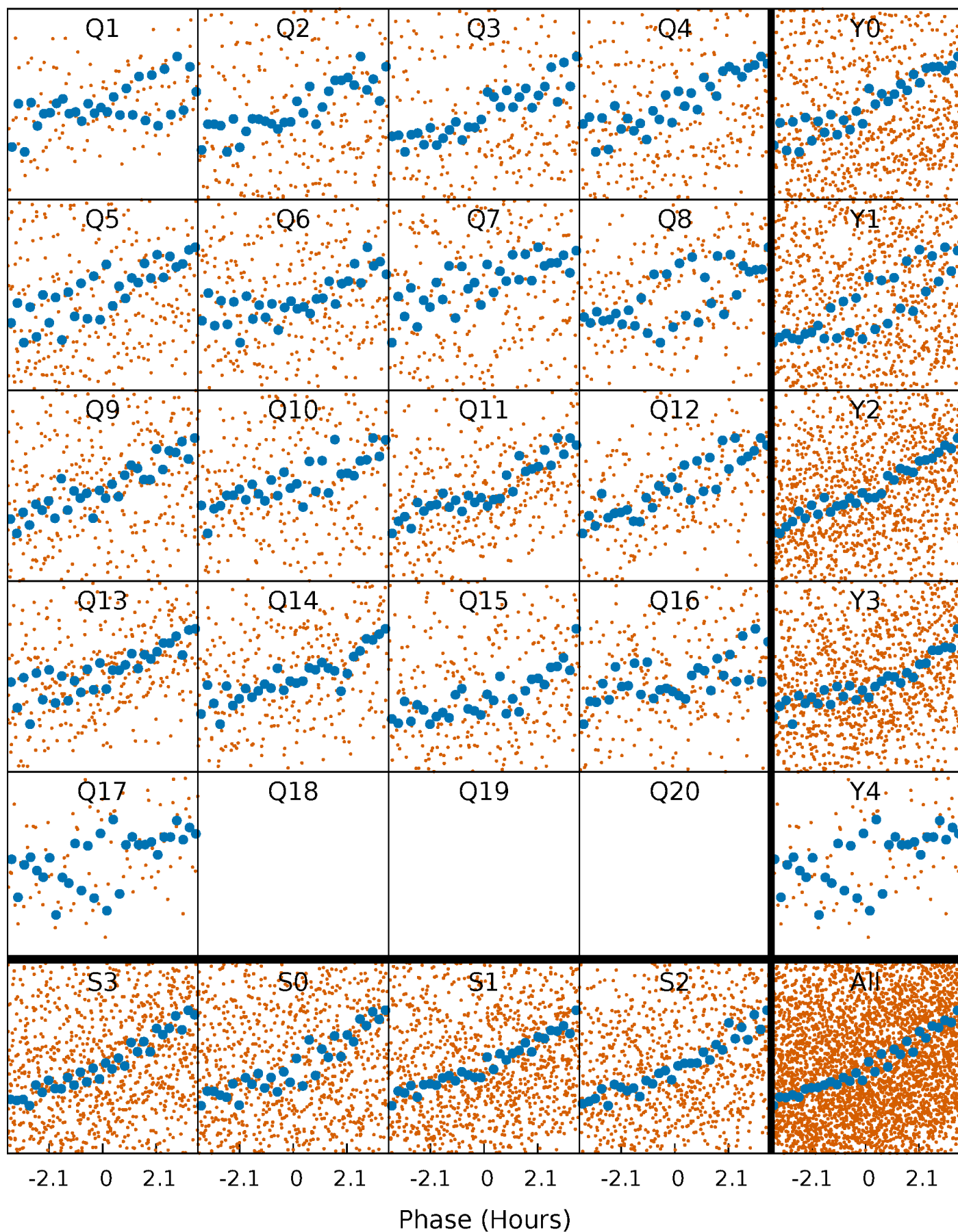


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



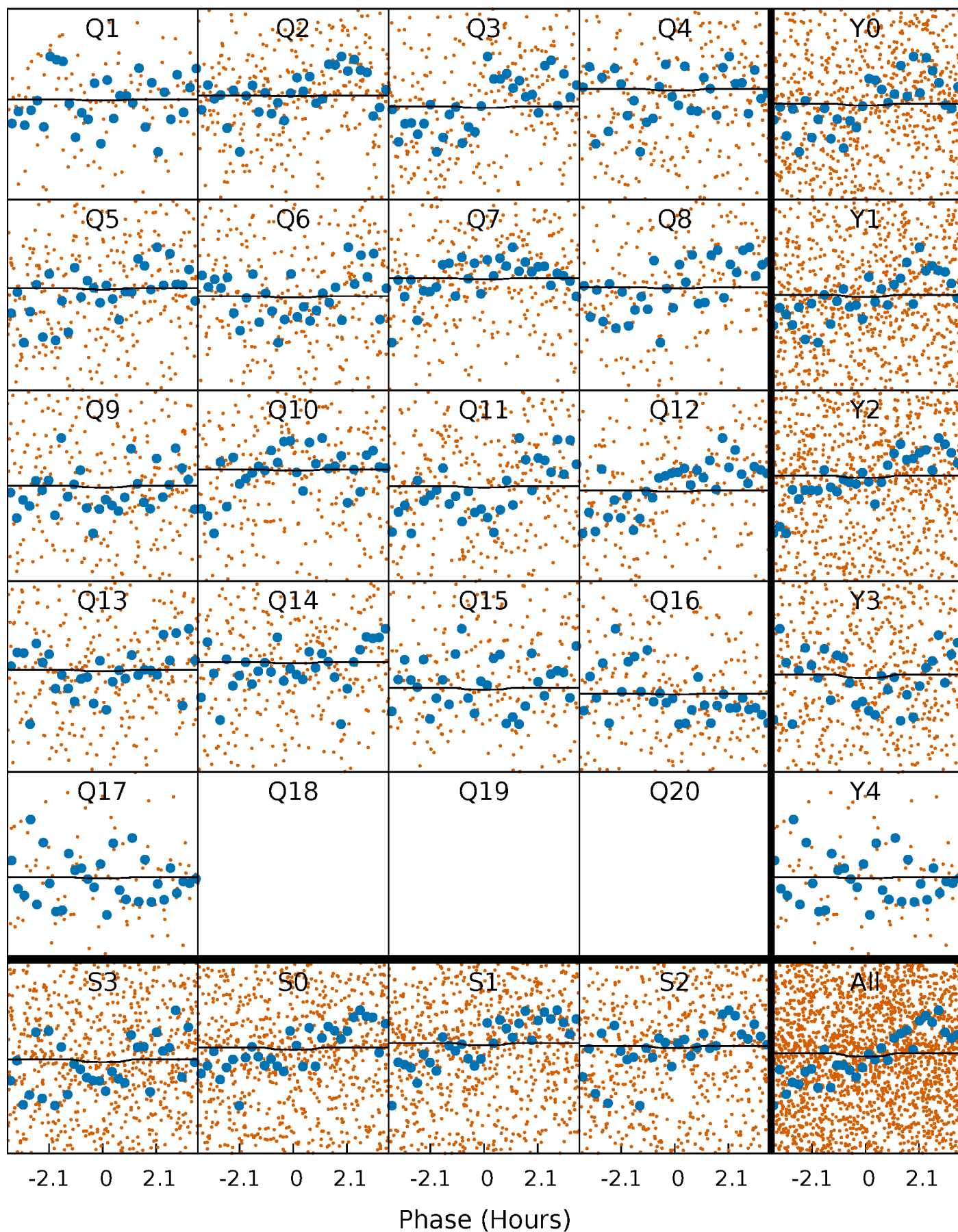
PDC Quarter-Phased Transit Curves

TCE 007041856-02 P= 4.000334 Days $T_0=133.783747$ (BKJD)



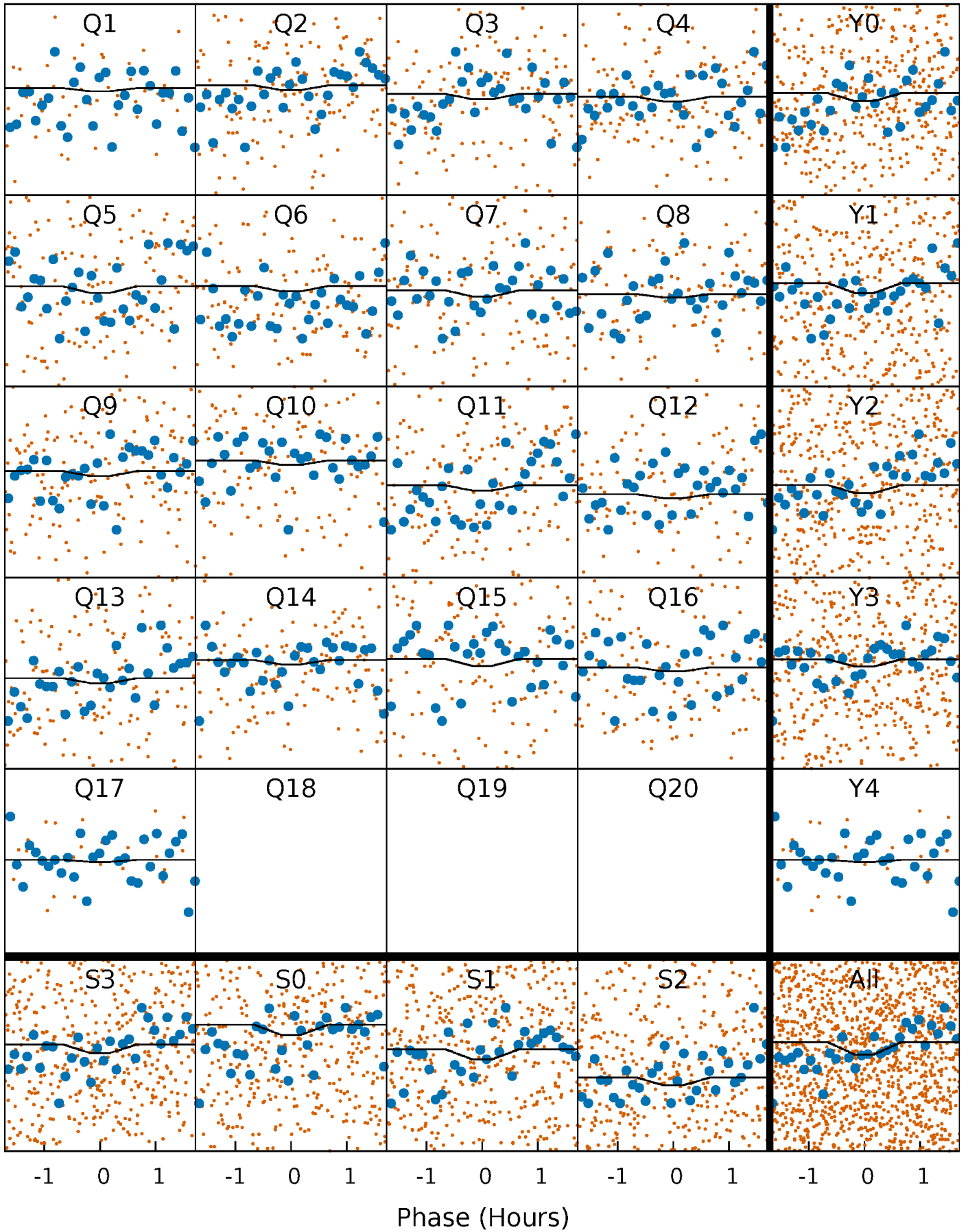
DV Quarter-Phased Transit Curves

TCE 007041856-02 P= 4.000334 Days $T_0=133.783747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

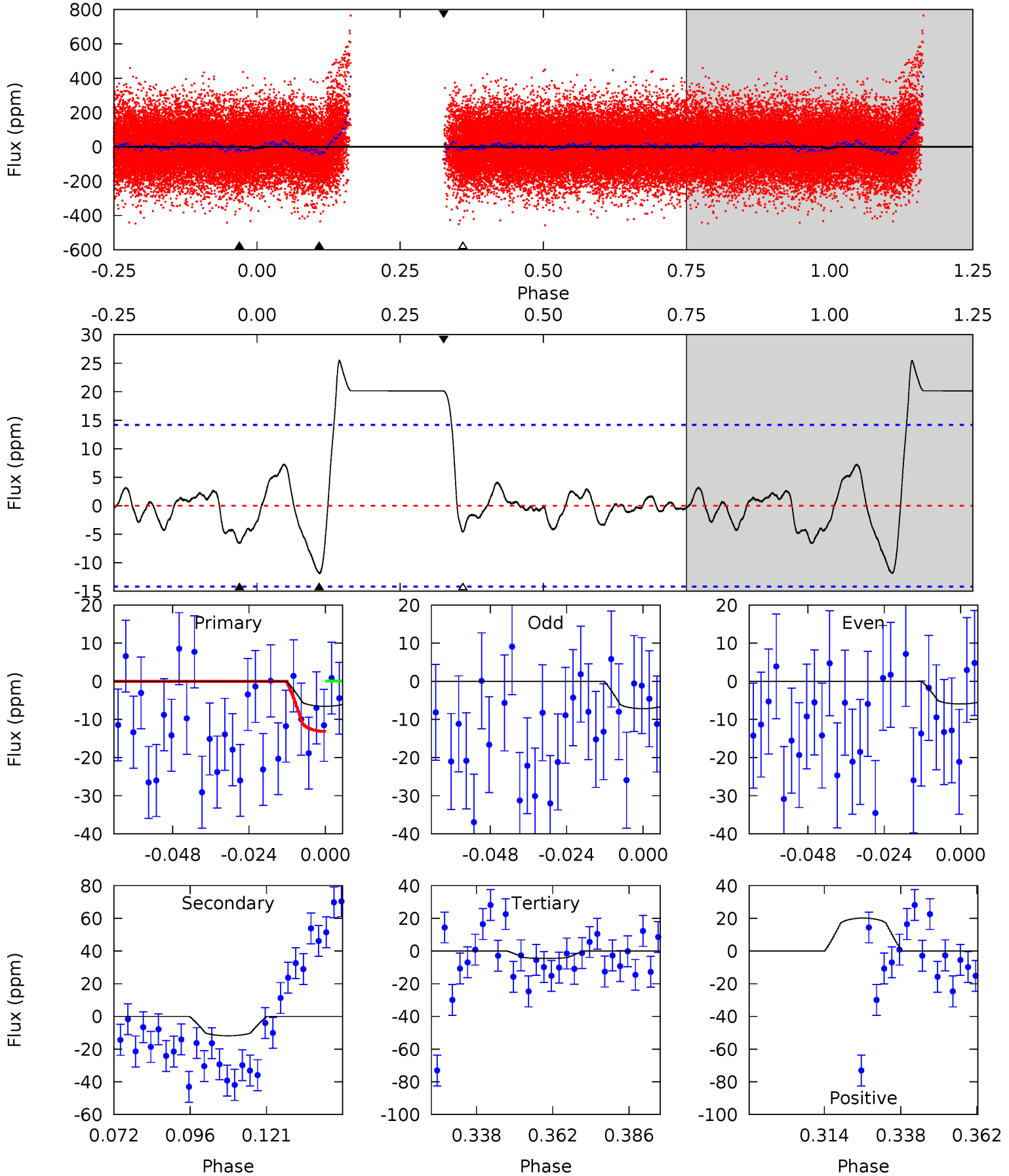
TCE 007041856-02 P= 4.000301 Days $T_0=133.808117$ (BKJD)



DV Model-Shift Uniqueness Test

007041856-02, P = 4.000334 Days, E = 129.783413 Days

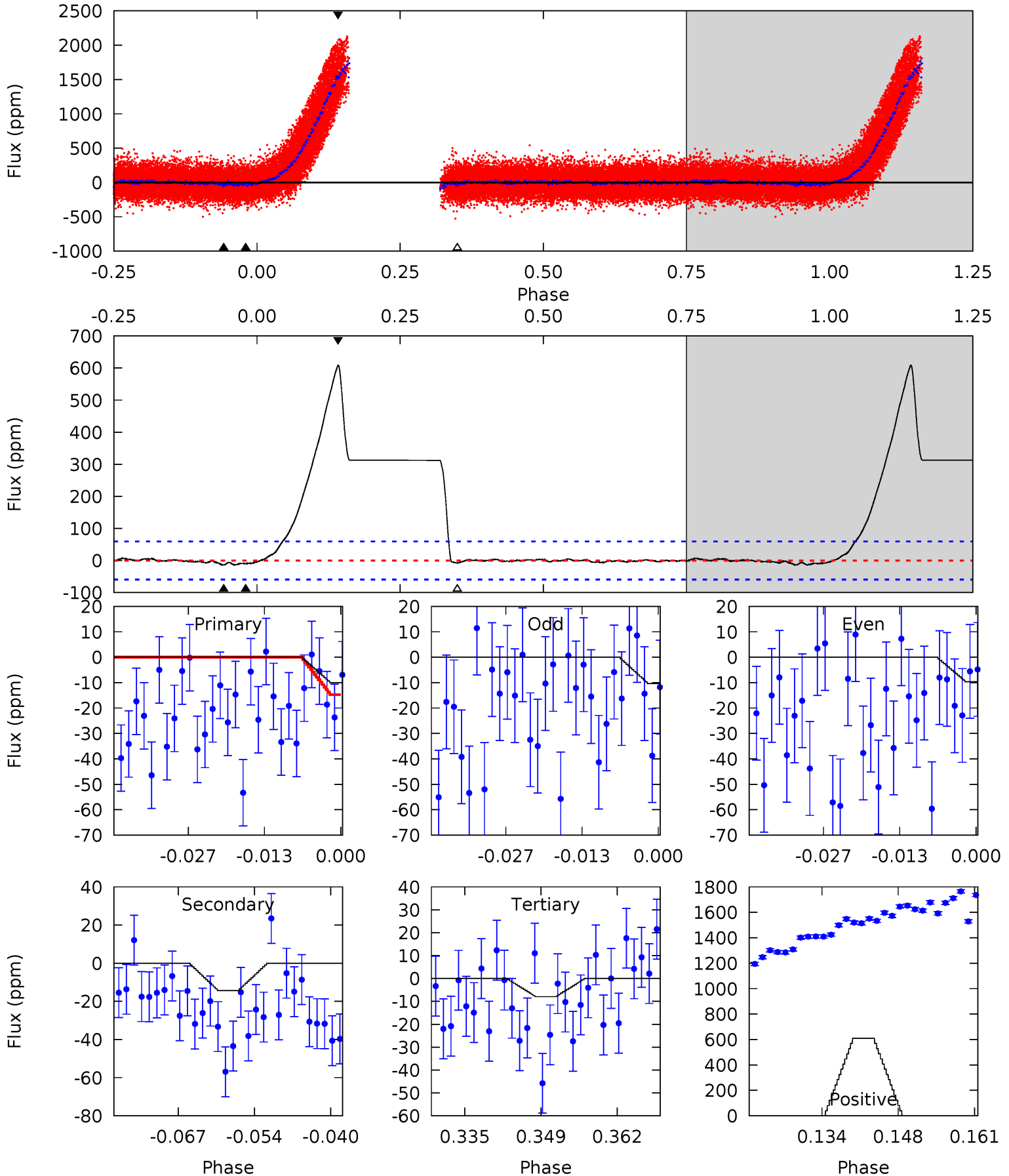
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.24	4.05	1.56	6.90	4.85	2.26	1.46	0.68	-4.66	2.49	-2.85	0.21	1.86	0.68	2.28



Alt Model-Shift Uniqueness Test

007041856-02, P = 4.000301 Days, E = 129.807816 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.84	1.20	0.67	51.1	4.97	2.47	9.78	0.17	-50.2	0.53	-49.9	0.03	1.14	0.98	0.33



Stellar Parameters For KIC 007041856

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6908^{+183}_{-204}	$3.652^{+0.330}_{-0.110}$	$-0.640^{+0.350}_{-0.300}$	$2.986^{+0.475}_{-1.109}$	$1.460^{+0.216}_{-0.324}$	$0.077^{+0.202}_{-0.021}$
	+3%/-3%	+9%/-3%	+55%/-47%	+16%/-37%	+15%/-22%	+262%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007041856-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 3	$4.47^{+4.77}_{-3.22}$	3064^{+191}_{-269}	3486^{+2757}_{-6069}	$0.982^{+11.646}_{-0.756}$
Alt.	-14 ± 12	$4.47^{+4.87}_{-3.12}$	3053^{+190}_{-268}	3420^{+2674}_{-6388}	$0.912^{+11.642}_{-0.813}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

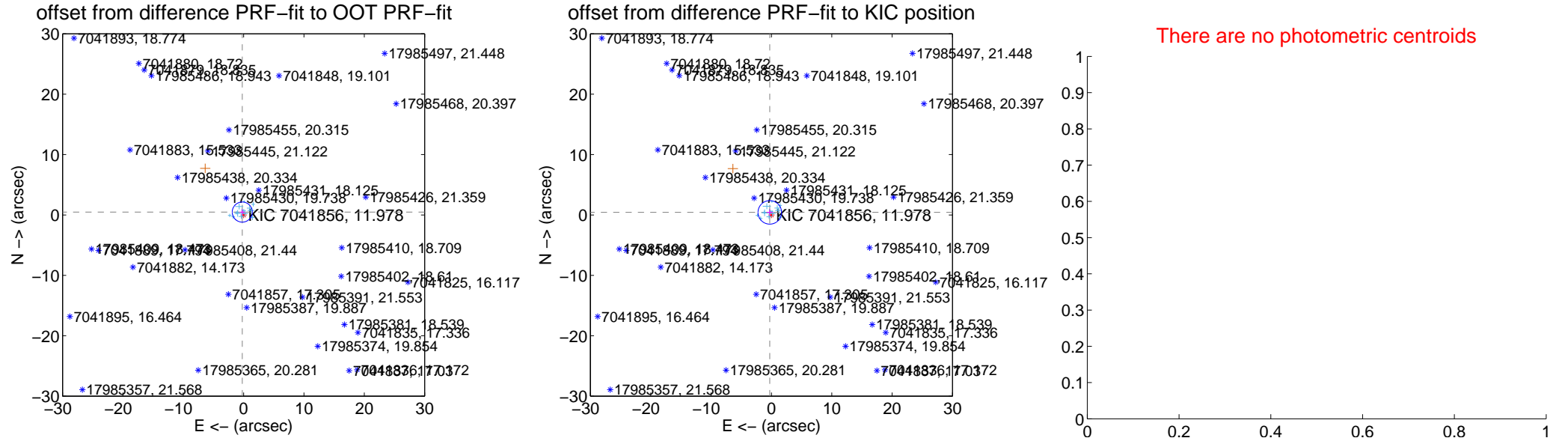
DV Centroid Data

Supplemental centroid analysis for 007041856-02. **Kepler magnitude: 11.98.** Transit SNR 0.38

There are 15 quarters with good PRF difference image offsets

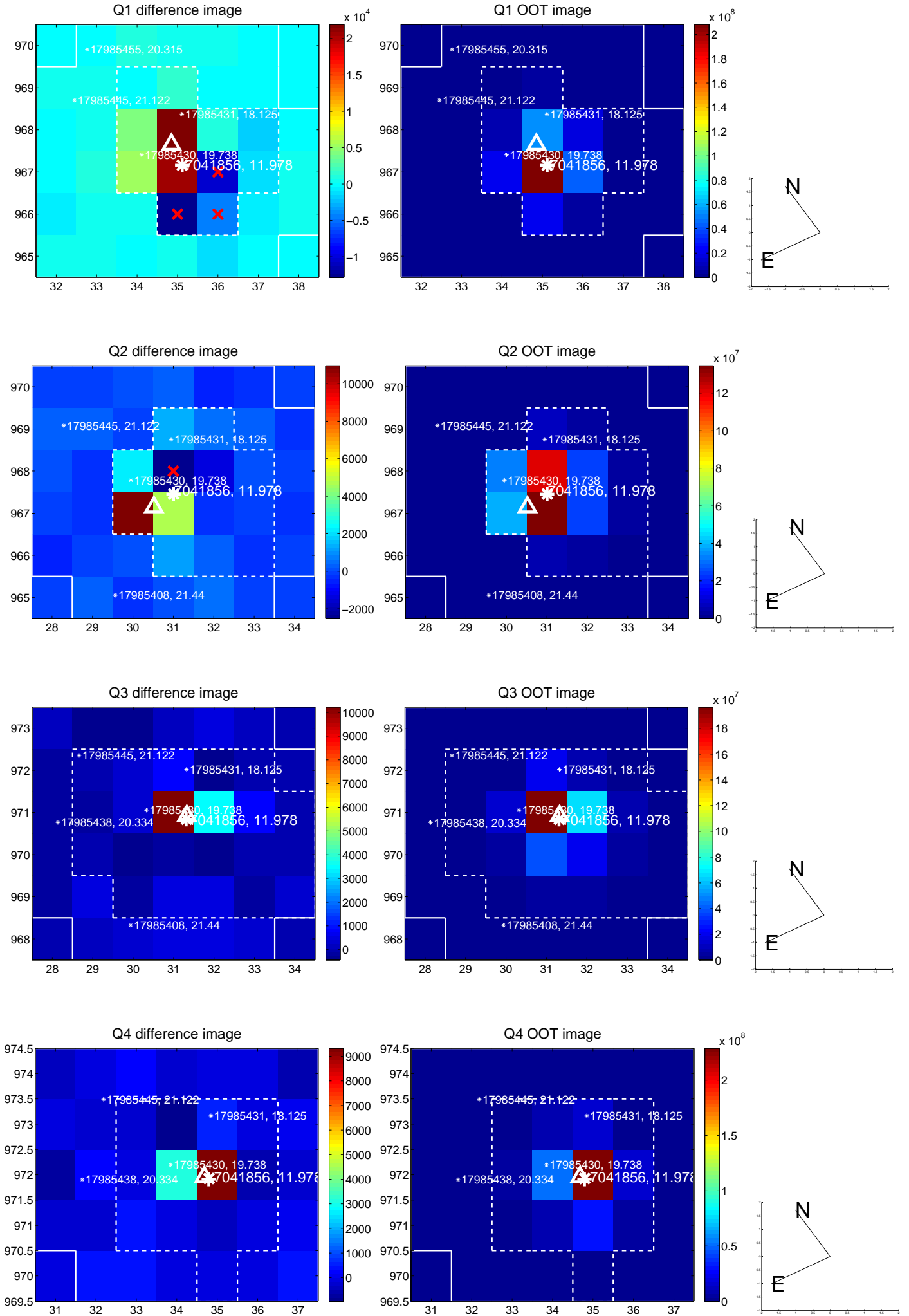
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.526 ± 0.555	0.95	0.220 ± 0.456	0.478 ± 0.451
PRF-fit source offset from KIC position	0.508 ± 0.649	0.78	0.272 ± 0.507	0.429 ± 0.505
photometric centroid source offset	—	—	—	—

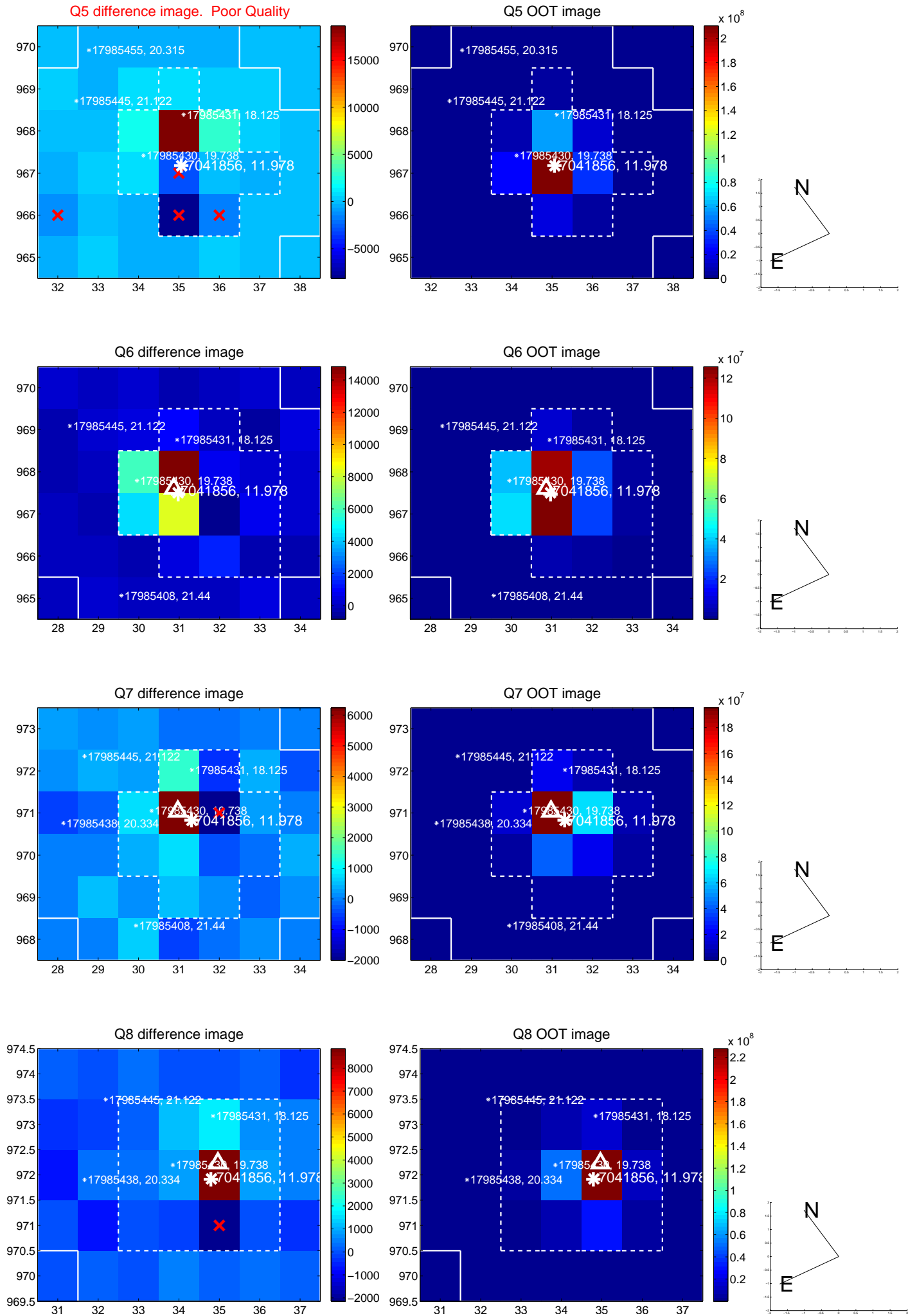


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

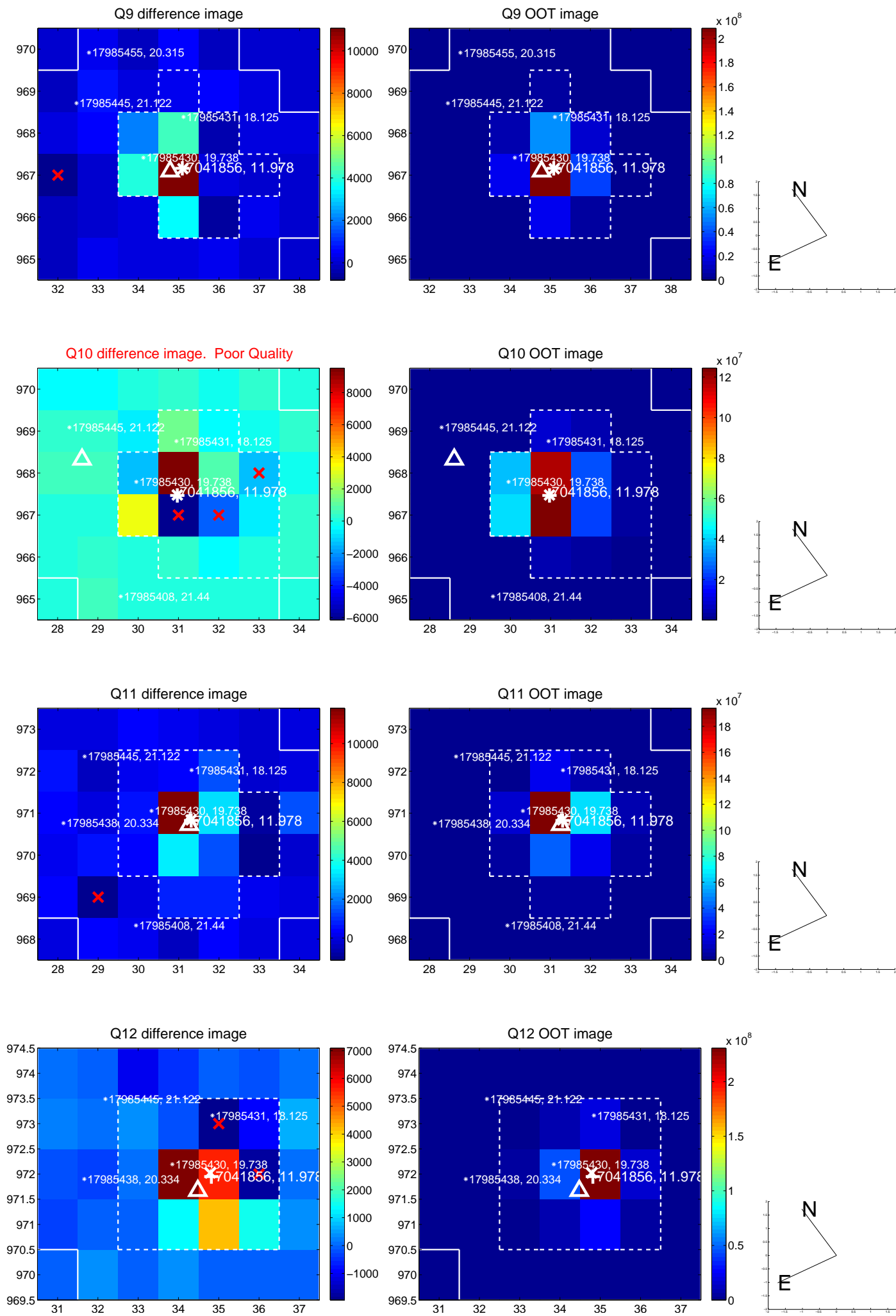
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



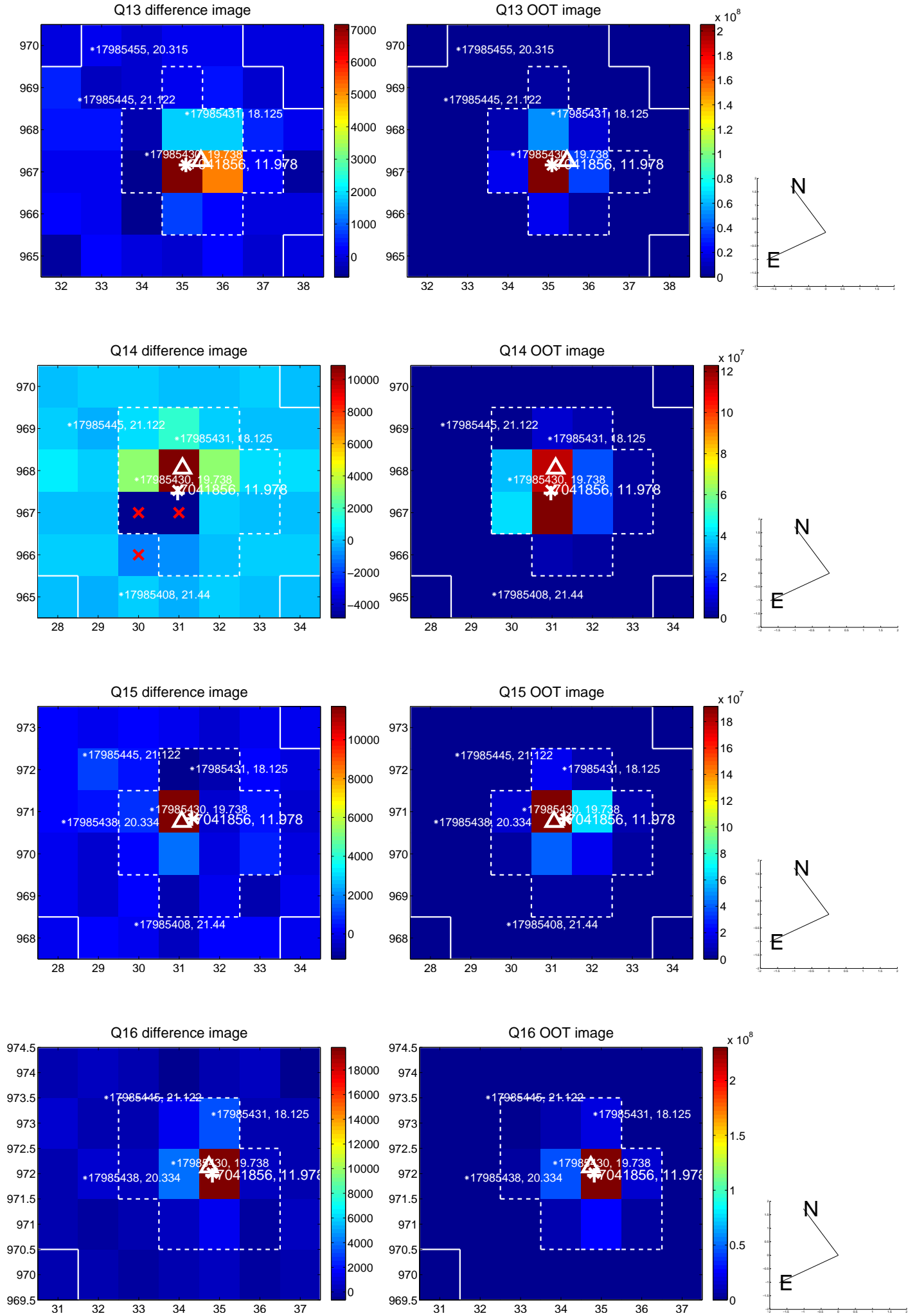
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



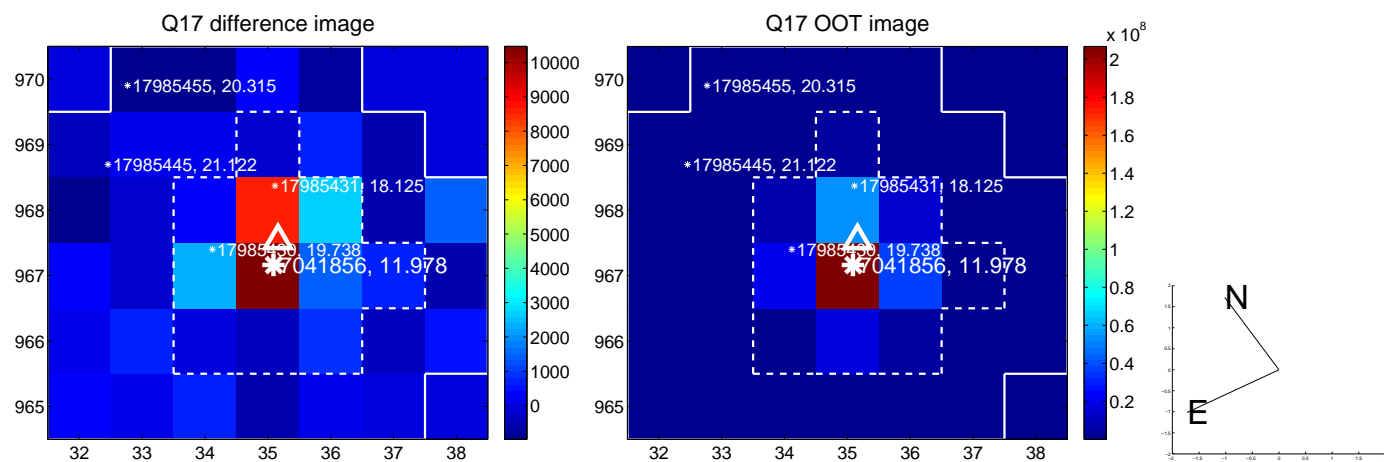
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

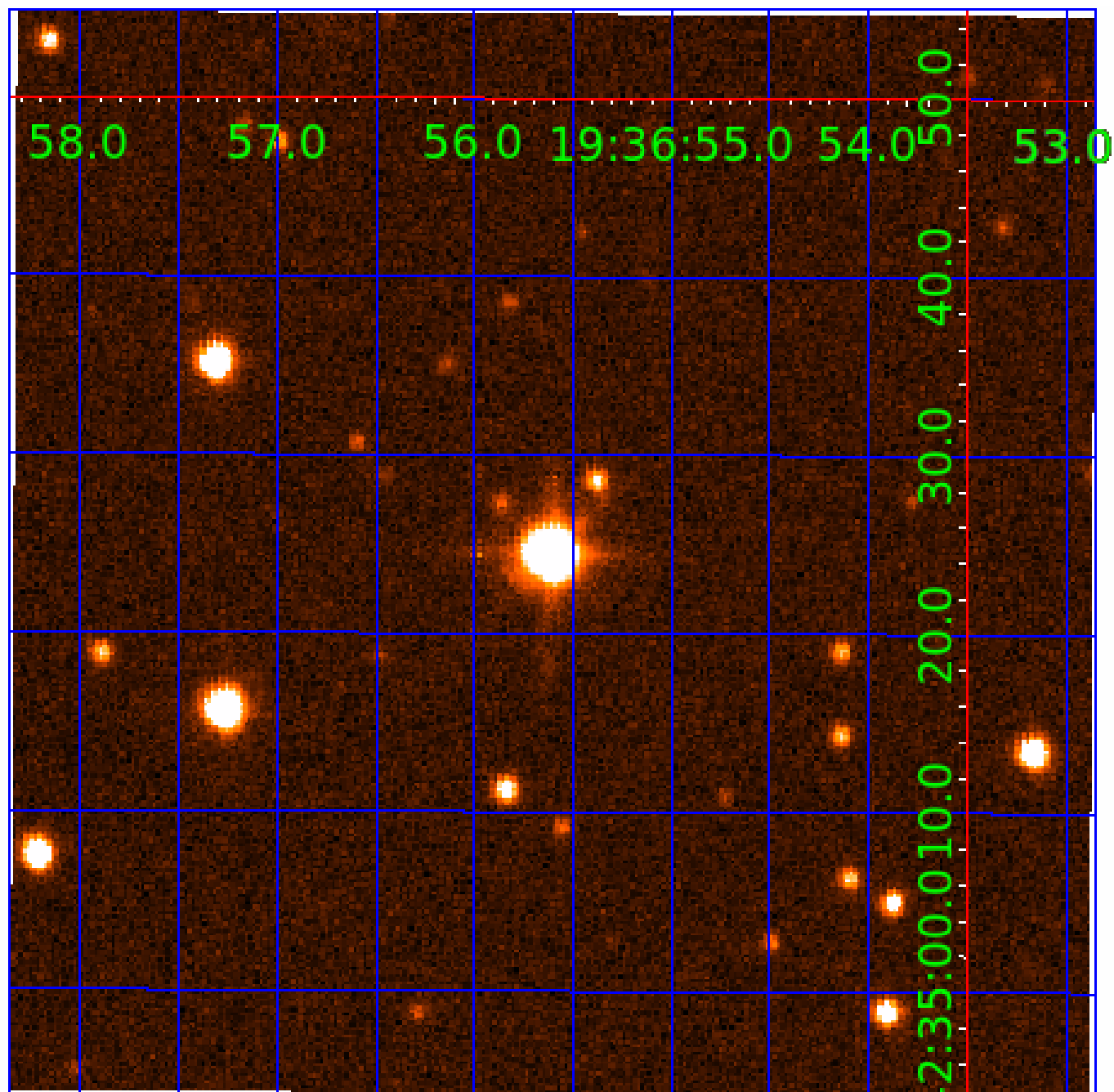


folded centroid time series figure for this object.



UKIRT Image

Declination



KIC 007041856

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007041856-01	OBS	No	4.000645	134.708775	62.1	5.850	16.0	13.4	2.99	6908	3.16	5810.19
007041856-02	OBS	No	4.000334	133.783747	1.9	1.873	11.5	0.4	2.99	6908	0.41	5810.79
007041856-03	OBS	No	4.000424	134.162616	42.2	5.245	11.4	11.4	2.99	6908	2.27	5810.62
007041856-04	OBS	No	410.614935	301.222063	295.6	4.521	7.1	7.5	2.99	6908	6.11	12.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007041856-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007041856-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
007041856-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
007041856-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

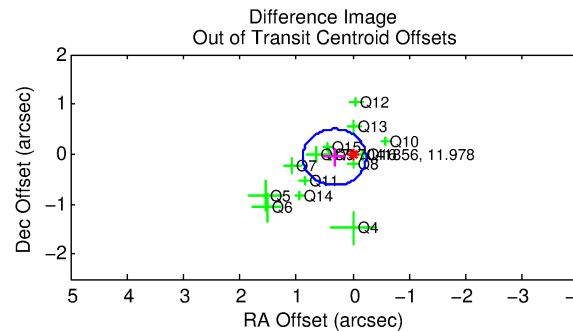
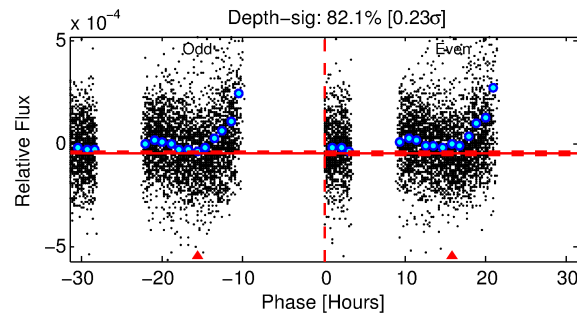
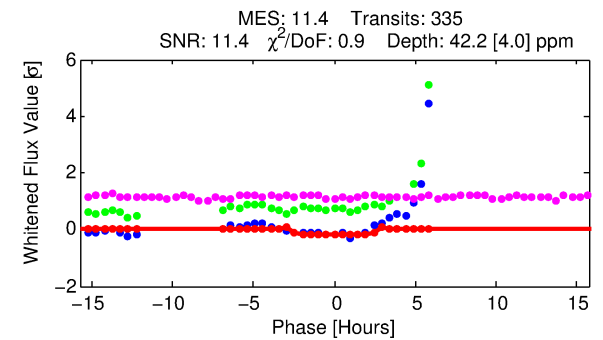
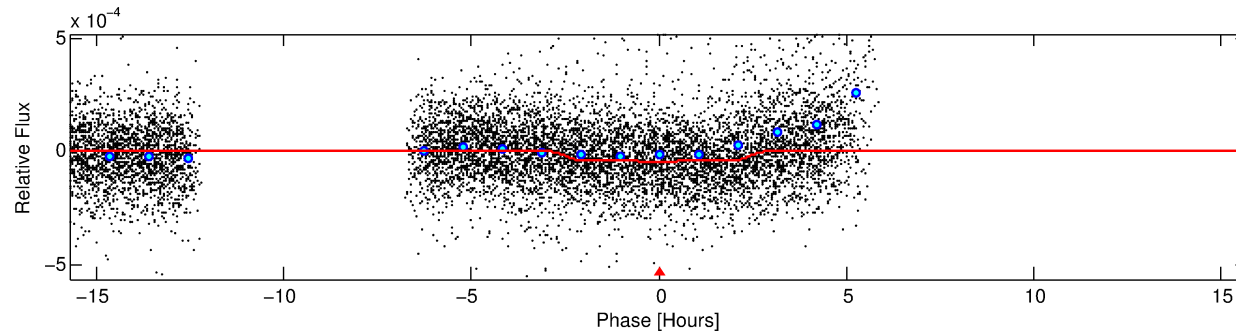
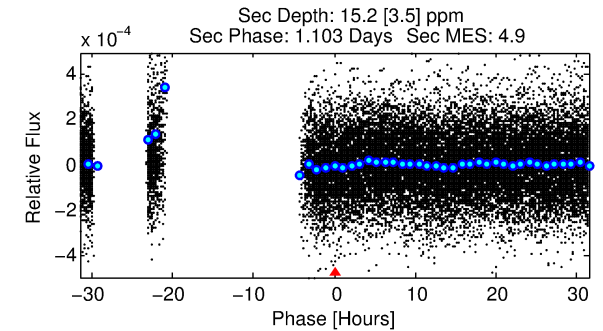
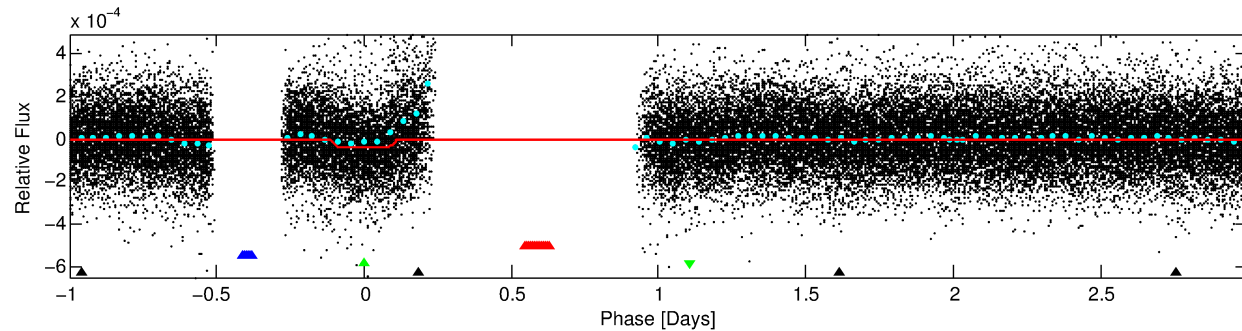
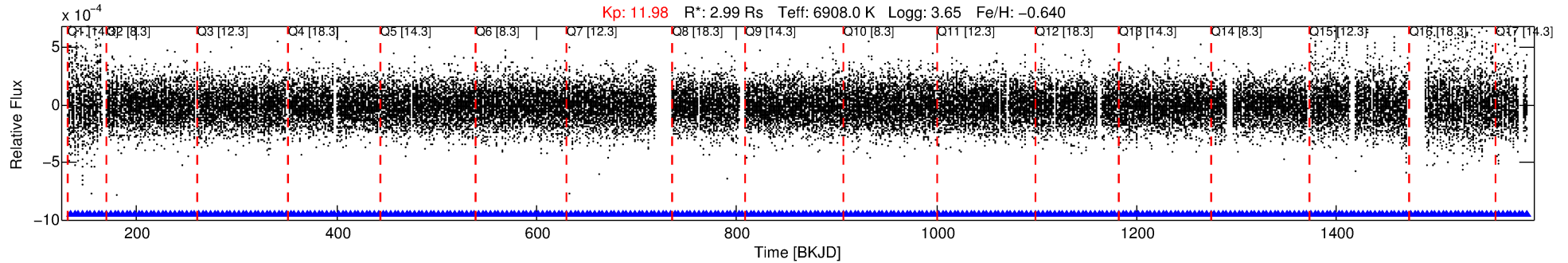
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007041856-03

No Significant Match Found

DV One-Page Summary

KIC: 7041856 Candidate: 3 of 4 Period: 4.000 d



DV Fit Results:

Period = 4.00042 [0.00003] d
Epoch = 134.1626 [0.0040] BKJD
Rp/R* = 0.0070 [0.0013]
a/R* = 2.71 [2.69]
b = 0.91 [0.23]
Seff = 5810.62 [3347.39]
Teq = 2226 [321] K
Rp = 2.27 [0.95] Re
a = 0.0560 [0.0198] AU
Ag = 5.10 [3.67] [1.12σ]
Teffp = 5174 [598] K [4.34σ]

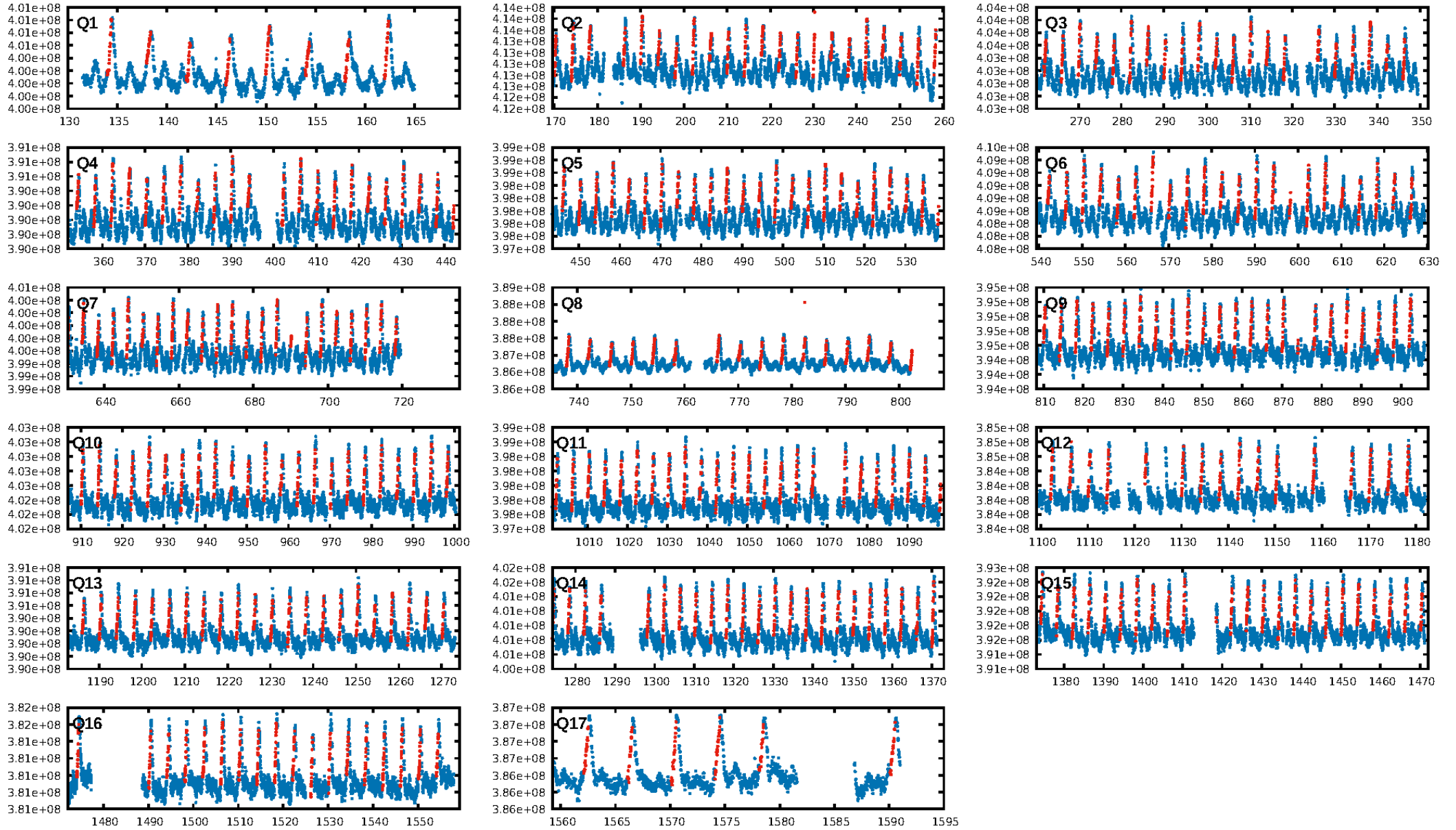
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.18e-22
RollingBand-fgt: 1.00 [321/321]
GhostDiagnostic-chr: 1.046
Centroid-sig: 32.9%
Centroid-so: 0.295 arcsec [0.89σ]
OotOffset-rm: 0.335 arcsec [1.78σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-rm: 0.406 arcsec [2.27σ]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/17]

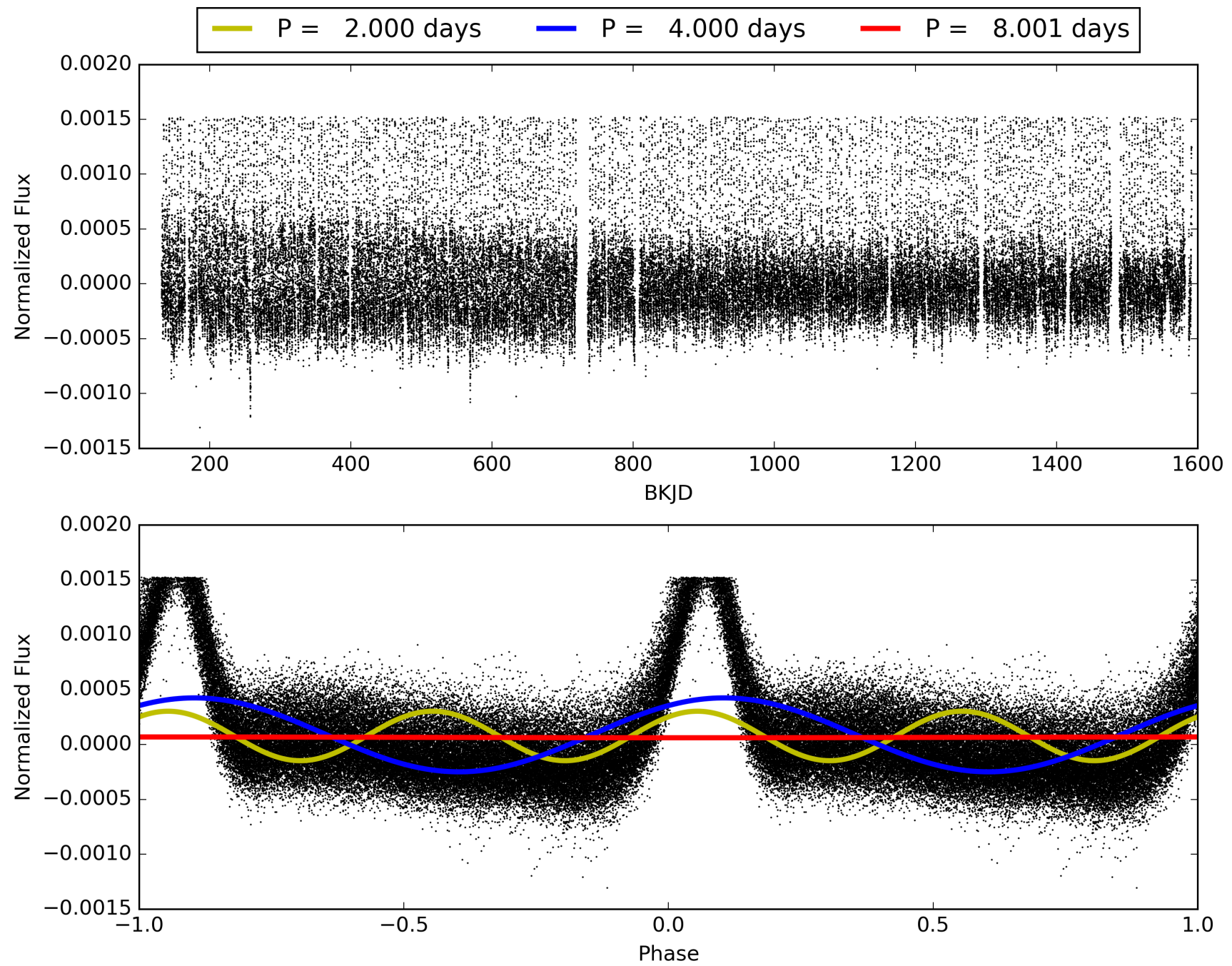
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:14:54 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007041856-03, PDC Light Curves

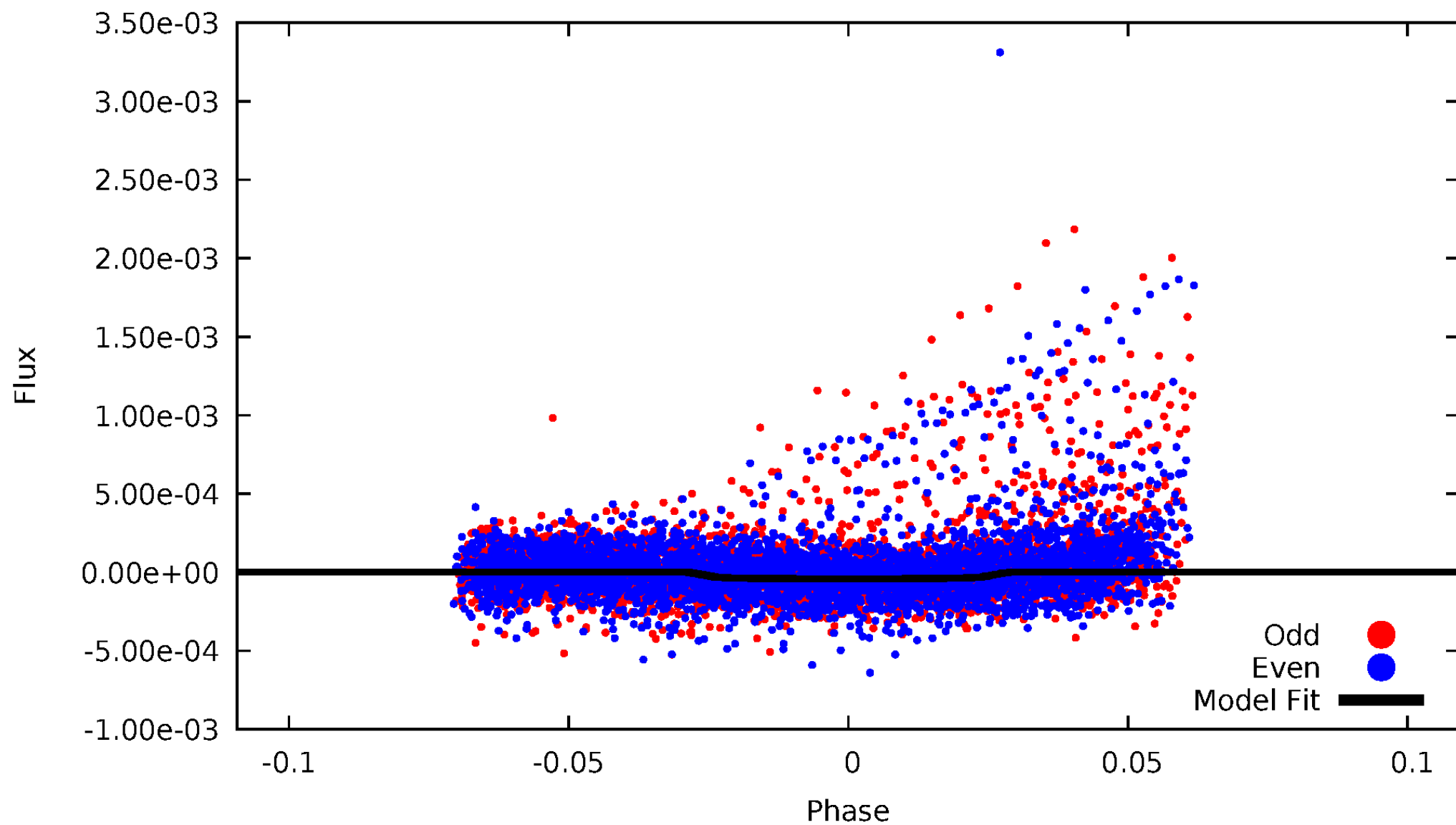


TCE 007041856-03



DV Odd/Even

TCE 007041856-03

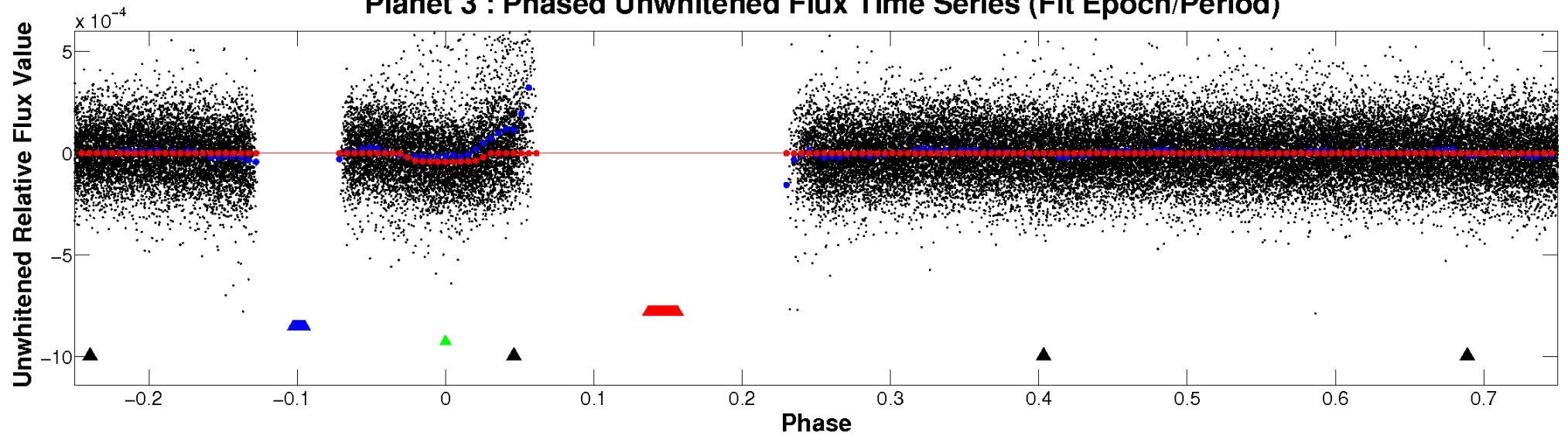


ALT Odd/Even

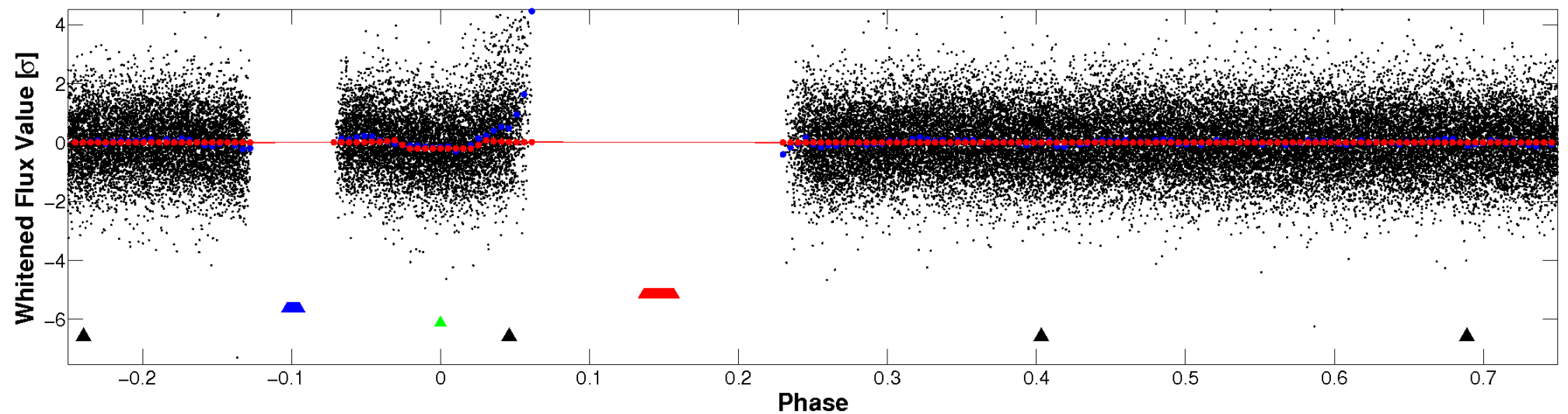
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

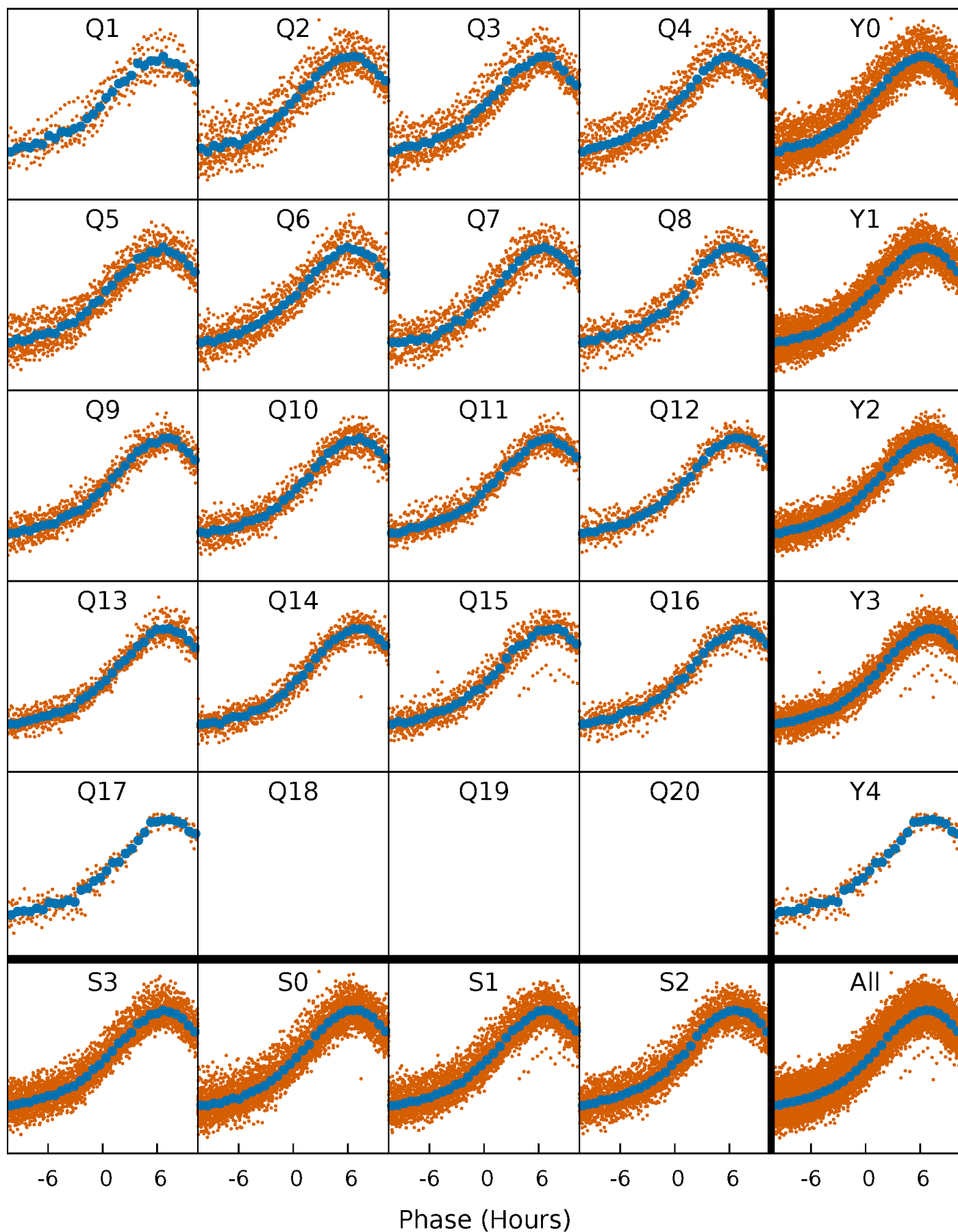


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



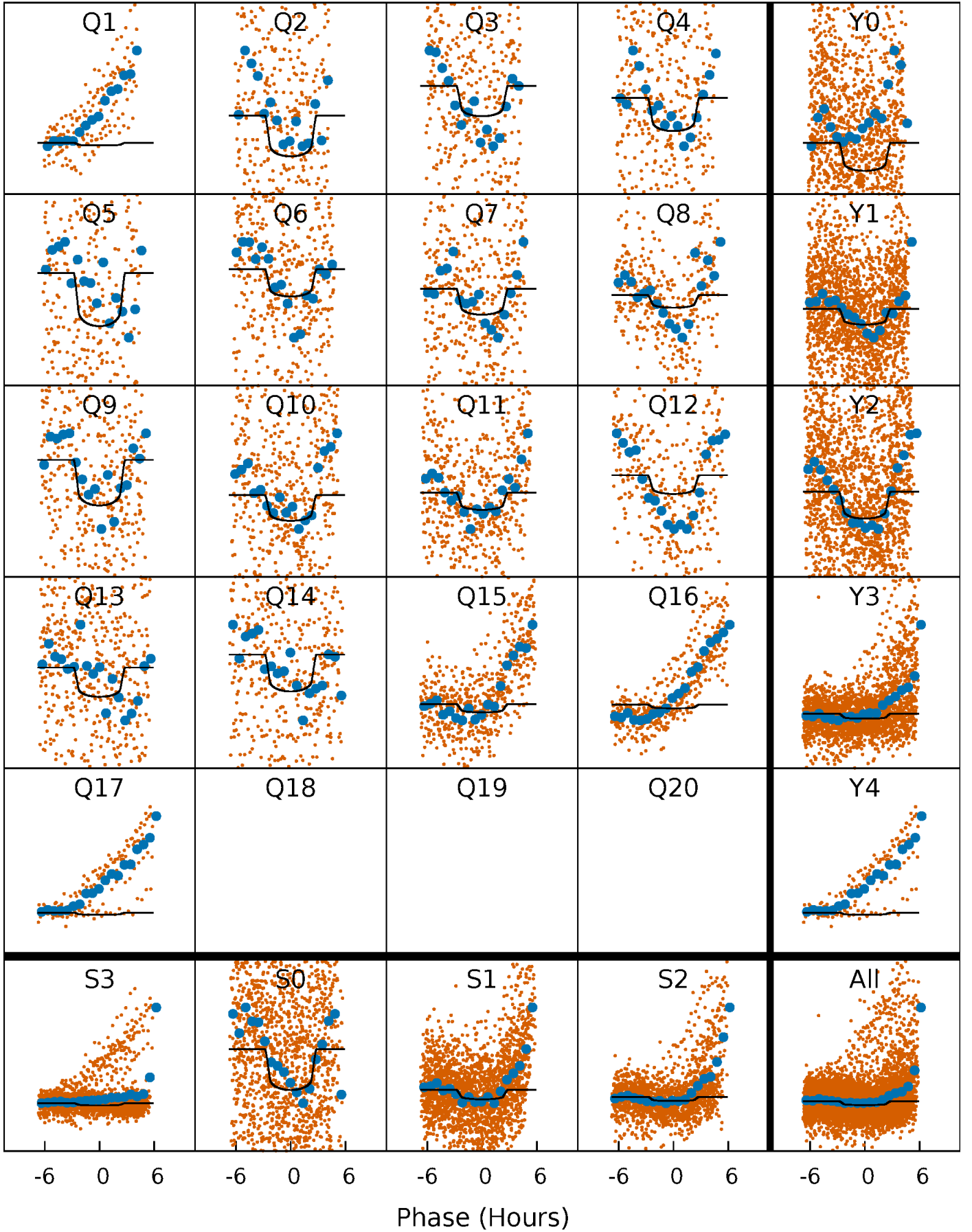
PDC Quarter-Phased Transit Curves

TCE 007041856-03 P= 4.000424 Days $T_0=134.162616$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007041856-03 $P = 4.000424$ Days $T_0 = 134.162616$ (BKJD)

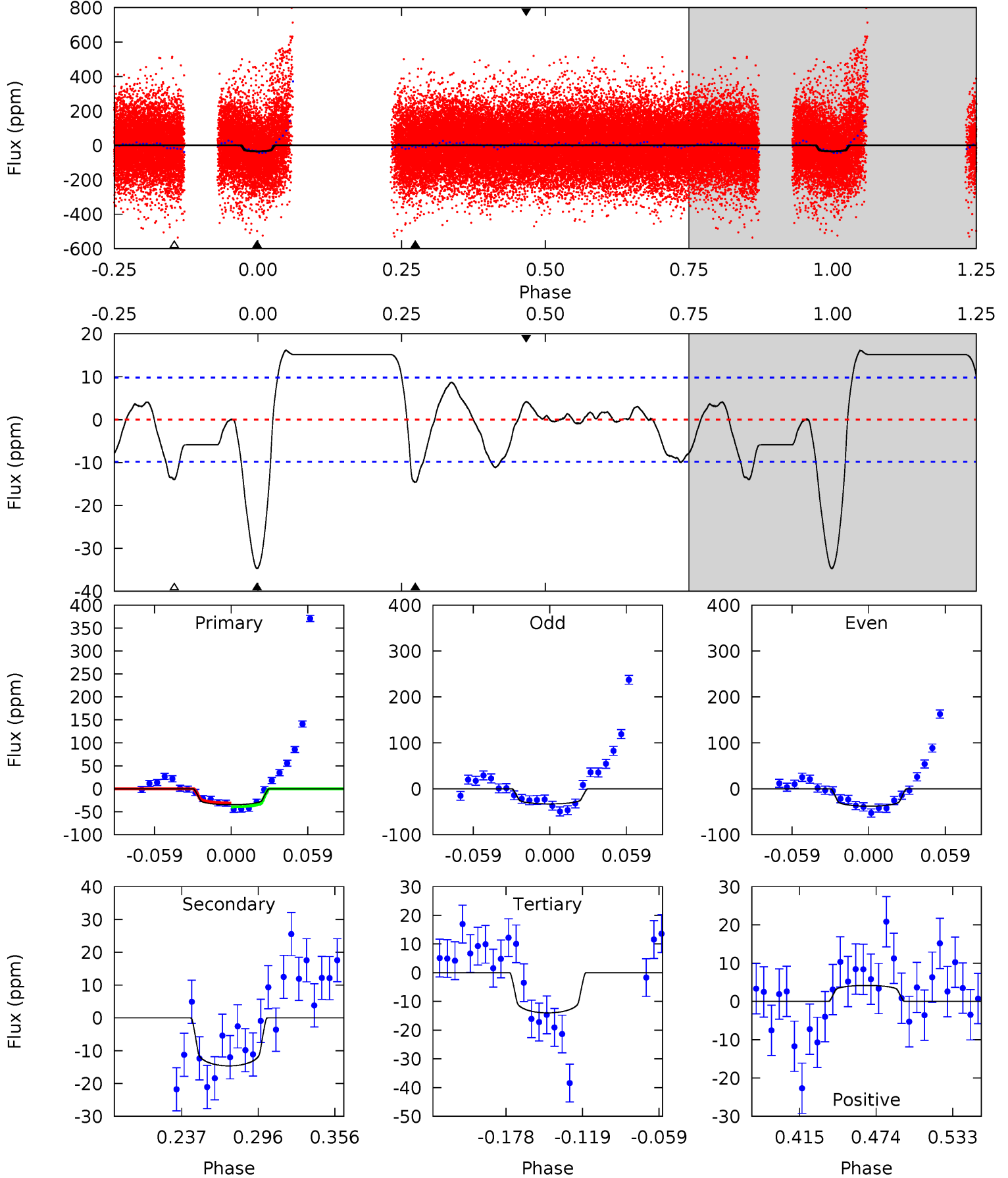


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007041856-03, P = 4.000424 Days, E = 130.162192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	6.98	6.67	1.99	4.67	1.89	2.42	9.89	14.6	0.32	4.99	1.17	0.30	0.32	2.13



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007041856

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6908^{+183}_{-204}	$3.652^{+0.330}_{-0.110}$	$-0.640^{+0.350}_{-0.300}$	$2.986^{+0.475}_{-1.109}$	$1.460^{+0.216}_{-0.324}$	$0.077^{+0.202}_{-0.021}$
	+3%/-3%	+9%/-3%	+55%/-47%	+16%/-37%	+15%/-22%	+262%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007041856-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 2	$2.15^{+0.55}_{-0.56}$	3063^{+191}_{-277}	5106^{+603}_{-437}	$5.469^{+4.404}_{-2.072}$
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

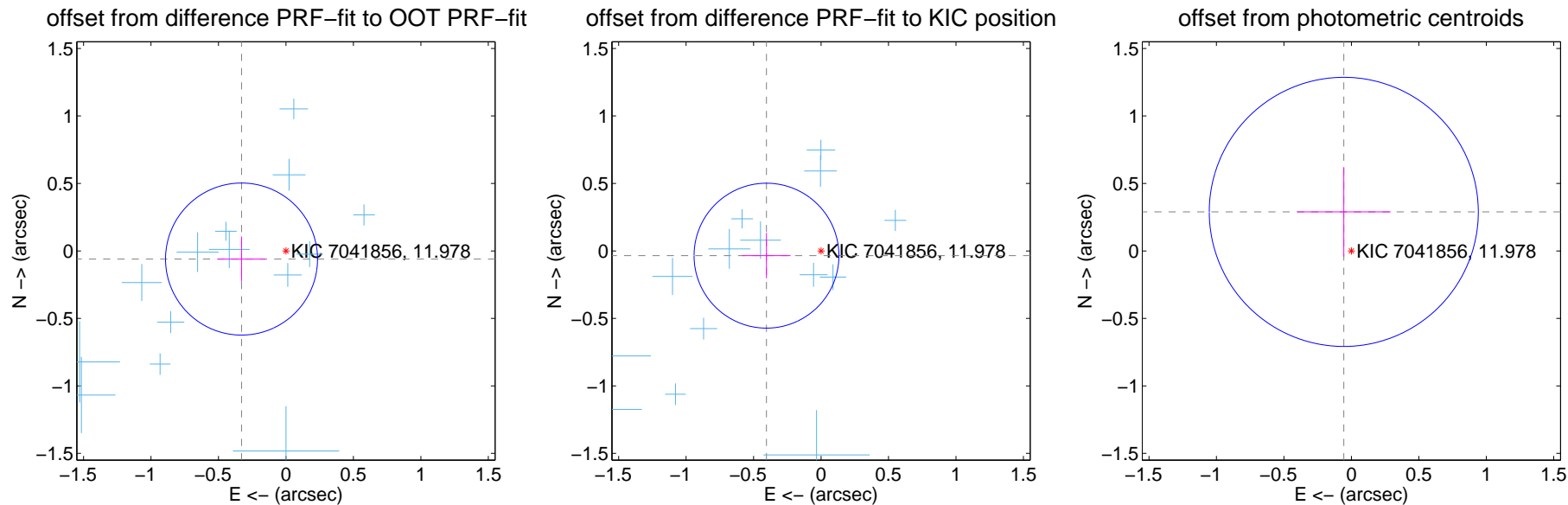
DV Centroid Data

Supplemental centroid analysis for 007041856-03. **Kepler magnitude: 11.98.** Transit SNR 11.45

There are 14 quarters with good PRF difference image offsets

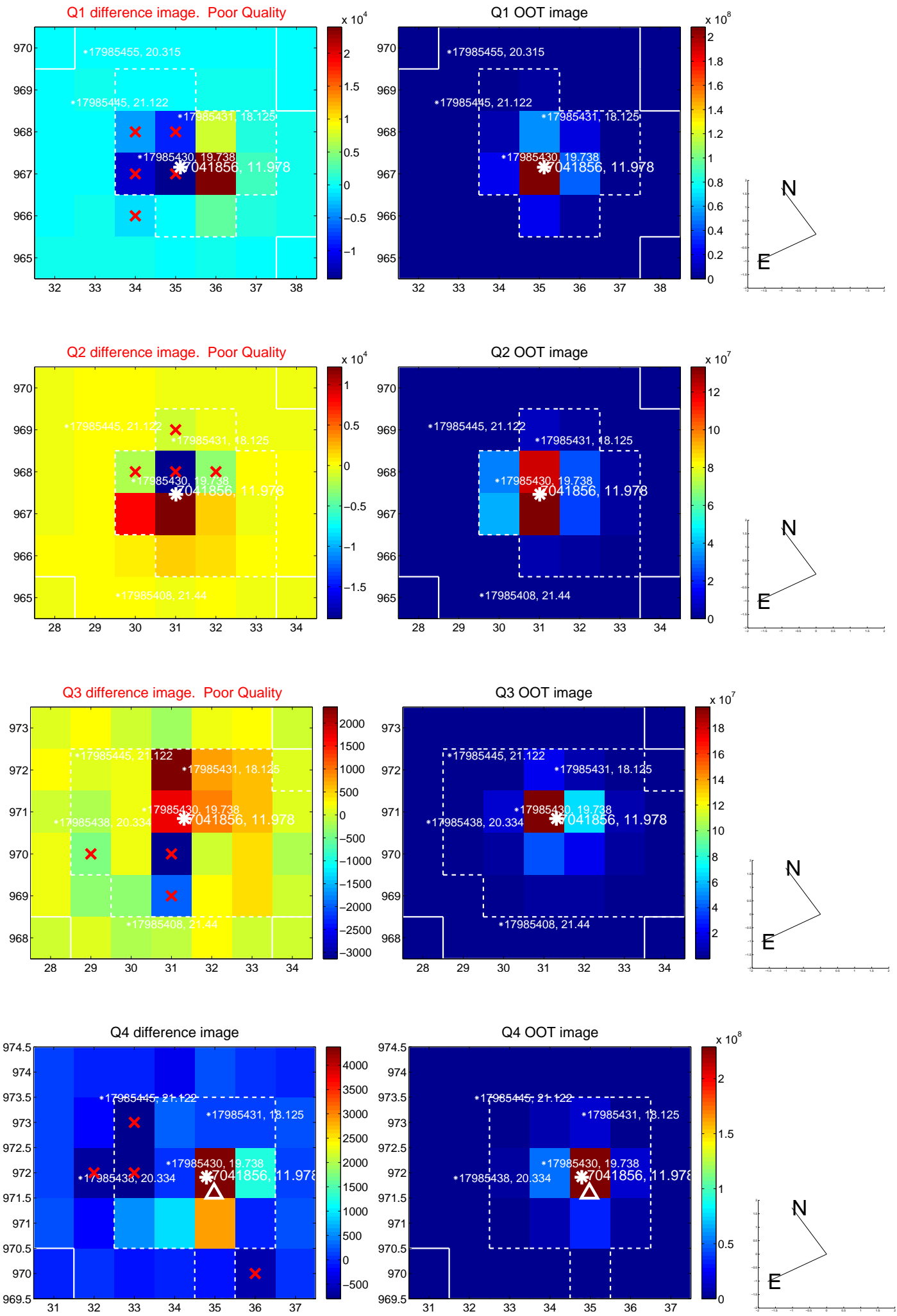
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.335 ± 0.188	1.78	0.329 ± 0.177	-0.060 ± 0.167
PRF-fit source offset from KIC position	0.406 ± 0.179	2.27	0.404 ± 0.179	-0.035 ± 0.168
photometric centroid source offset	0.29 ± 0.33	0.89	0.06 ± 0.35	0.29 ± 0.33

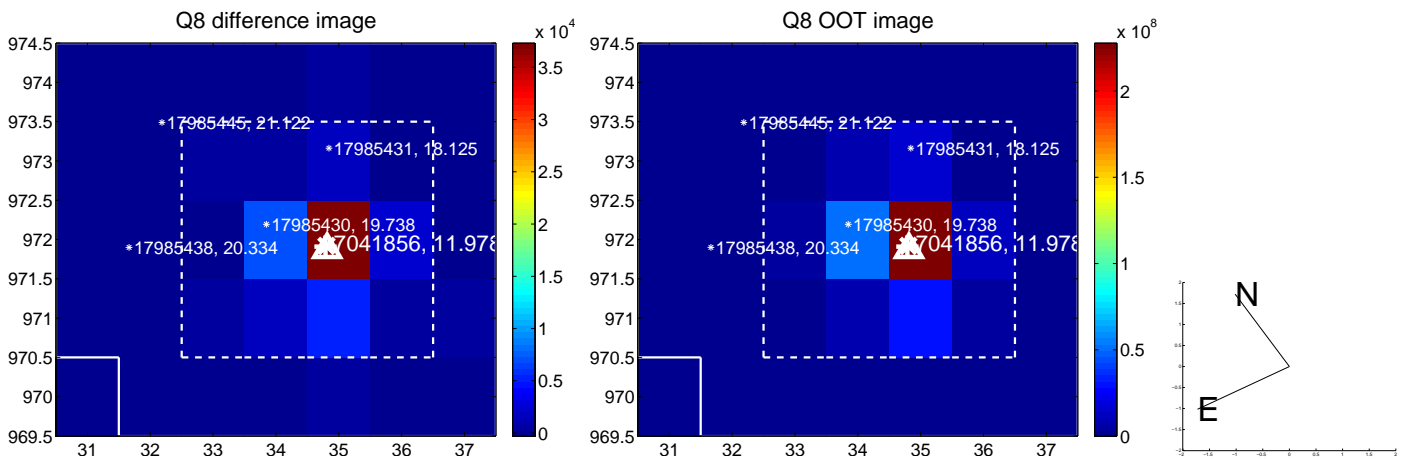
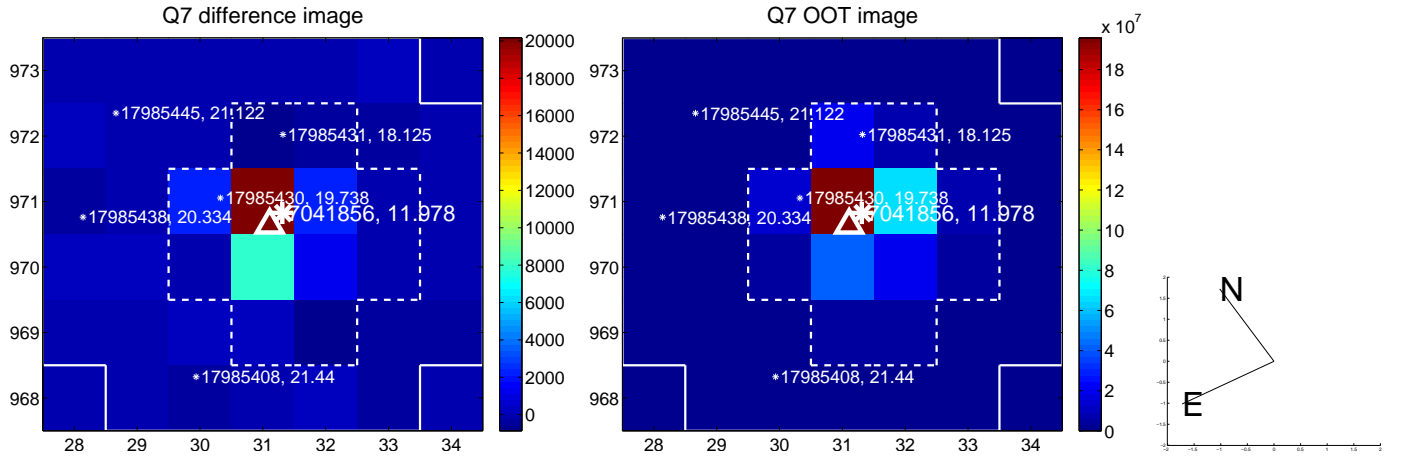
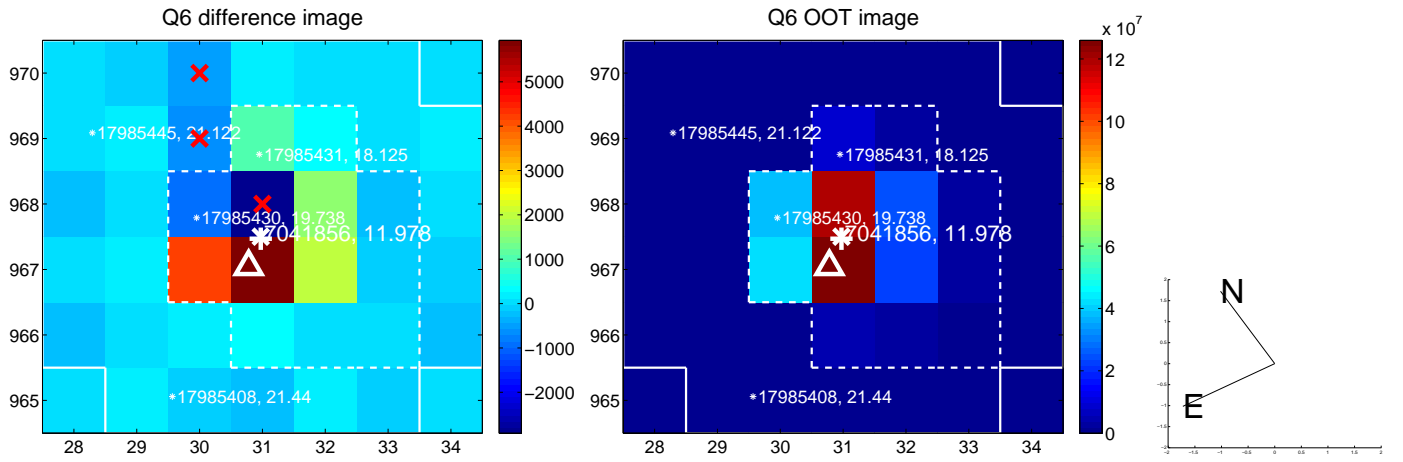
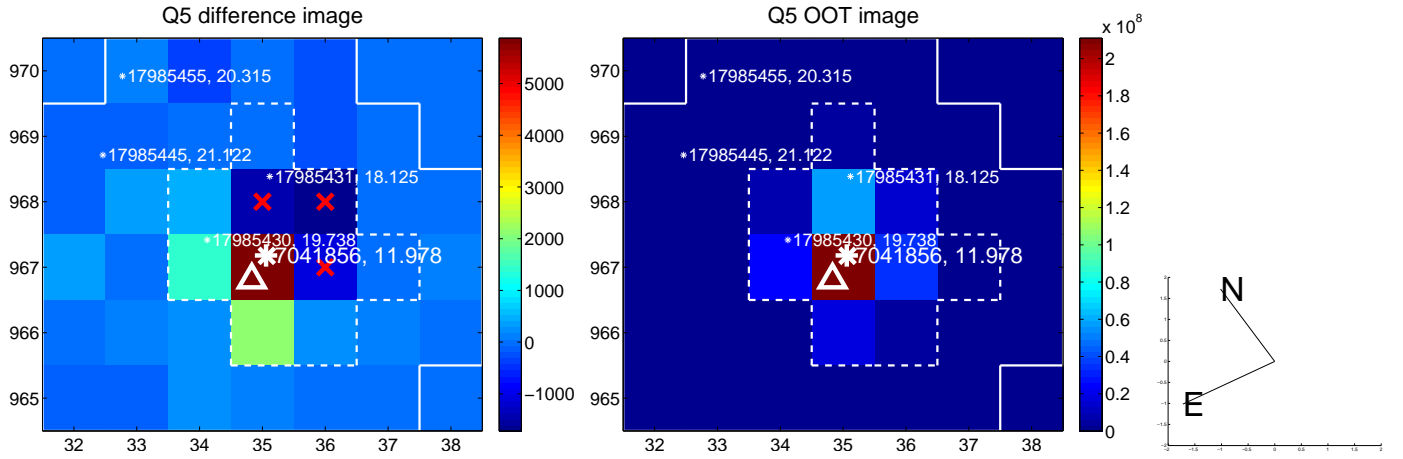


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

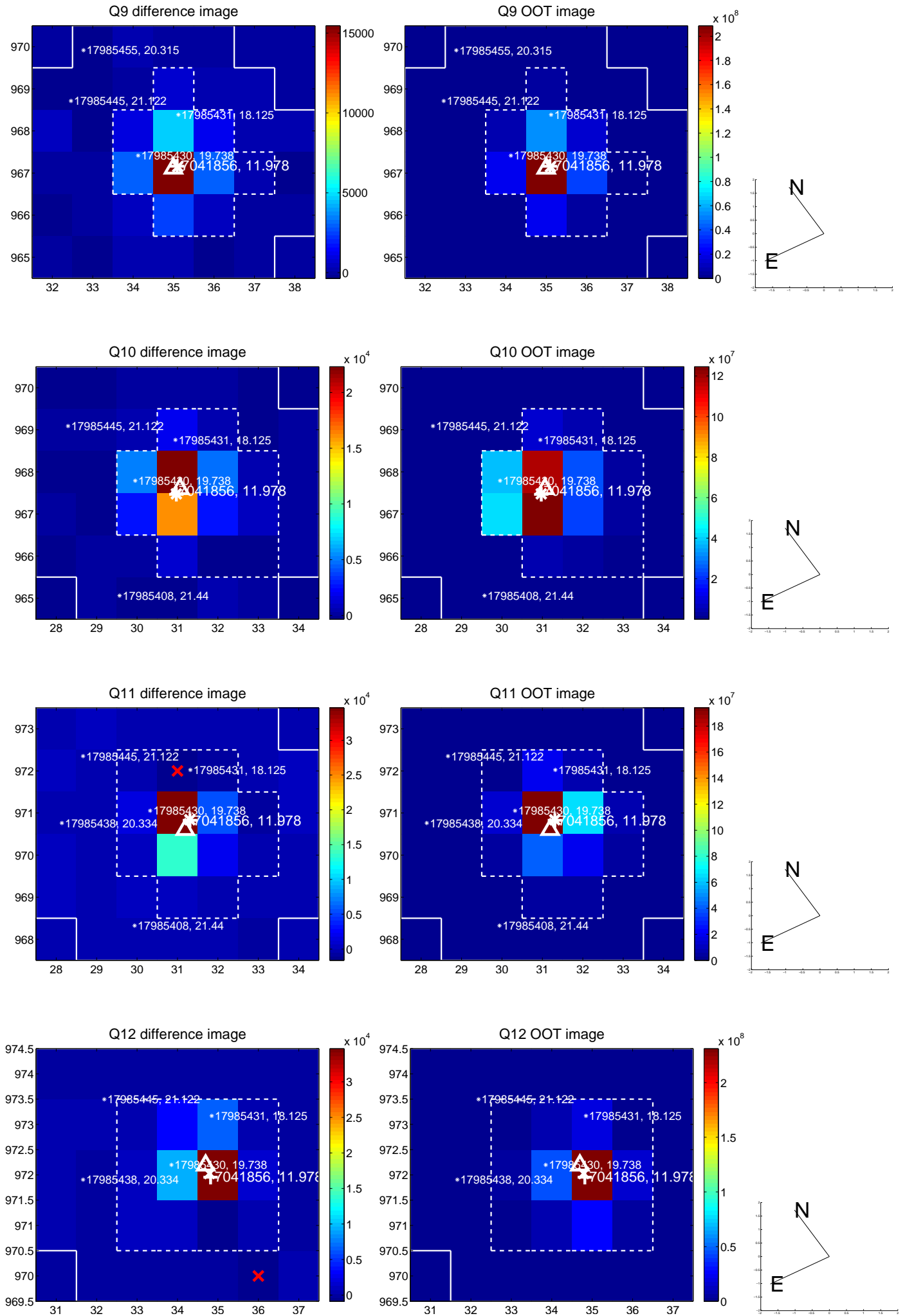
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



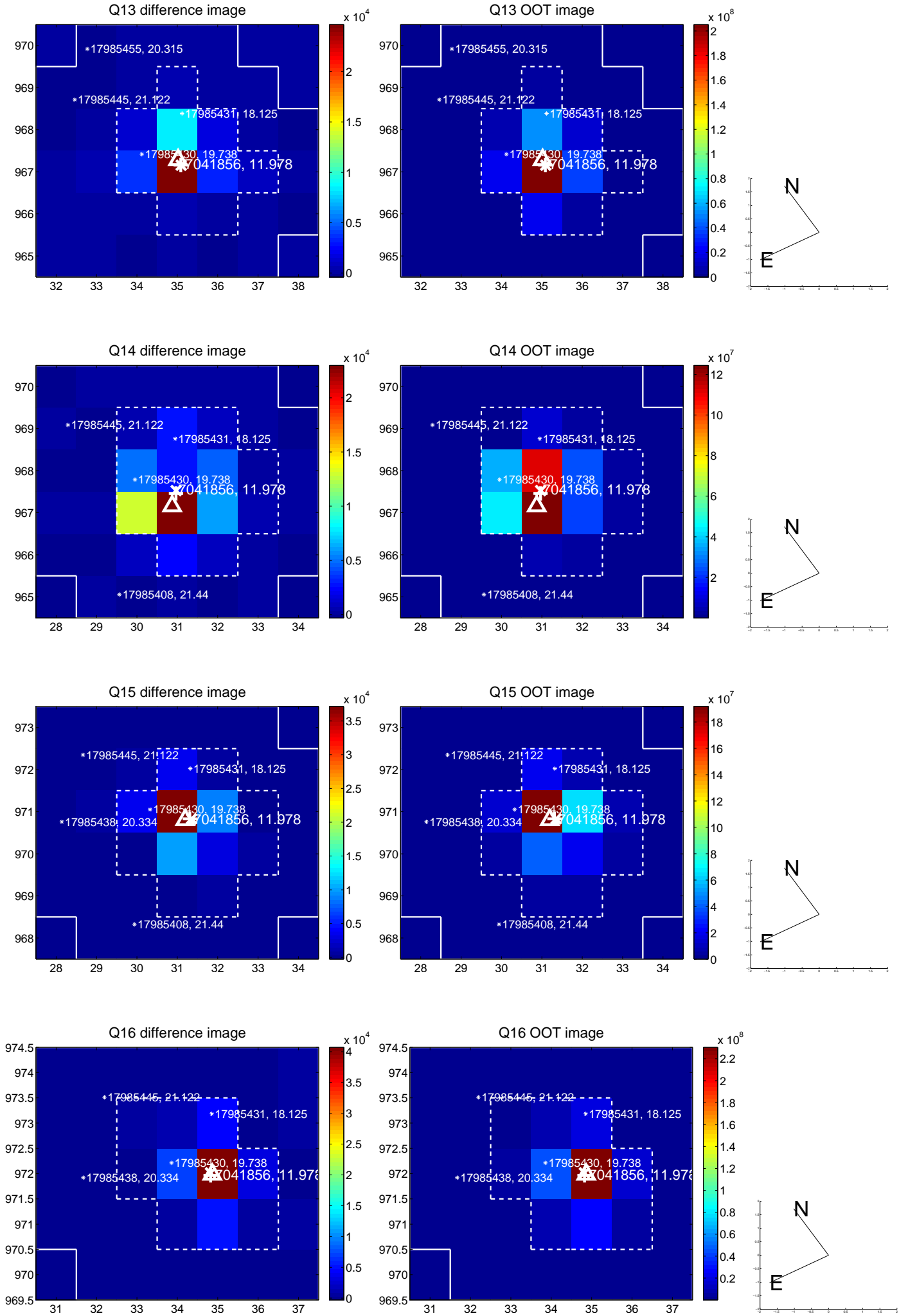
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



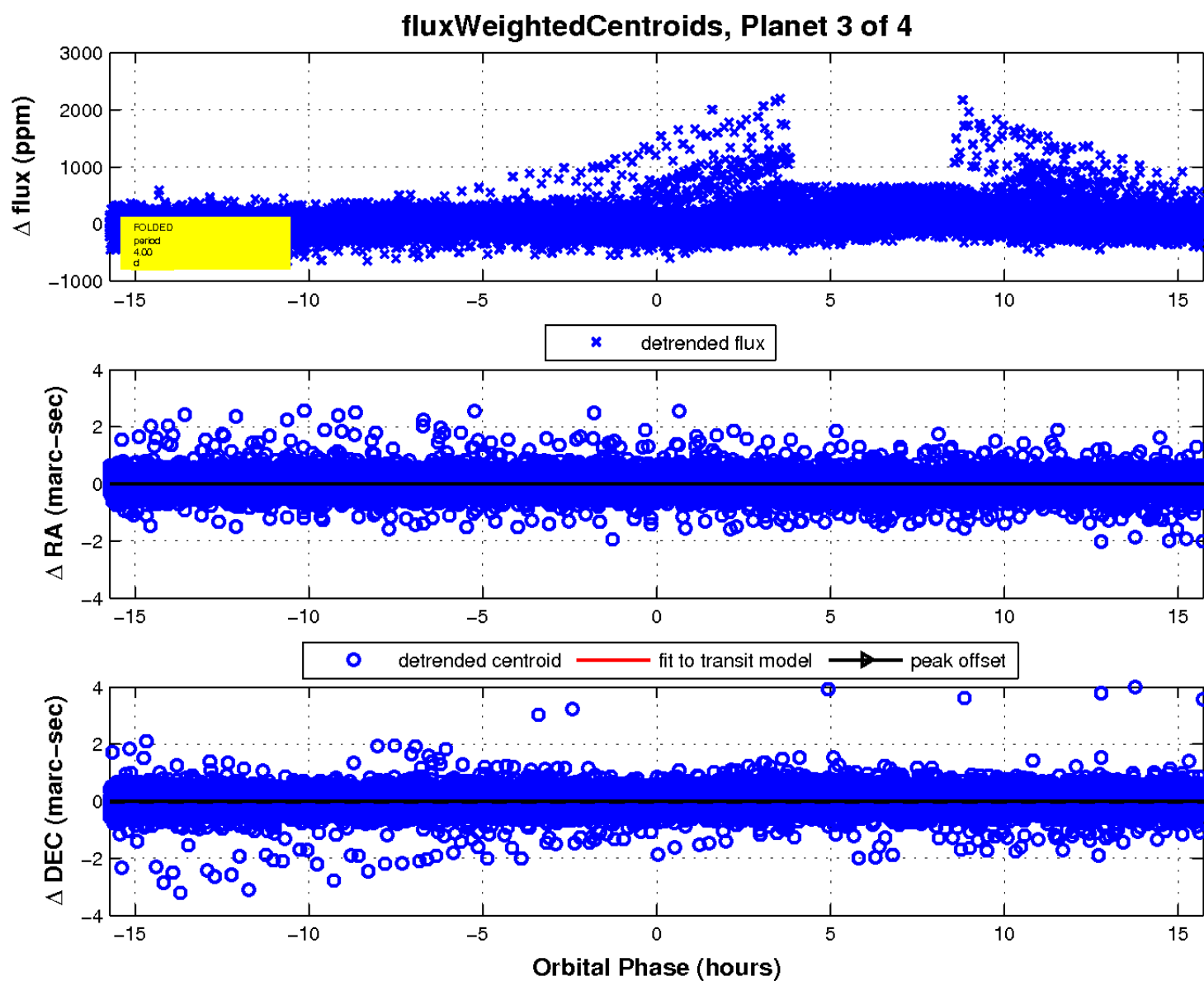
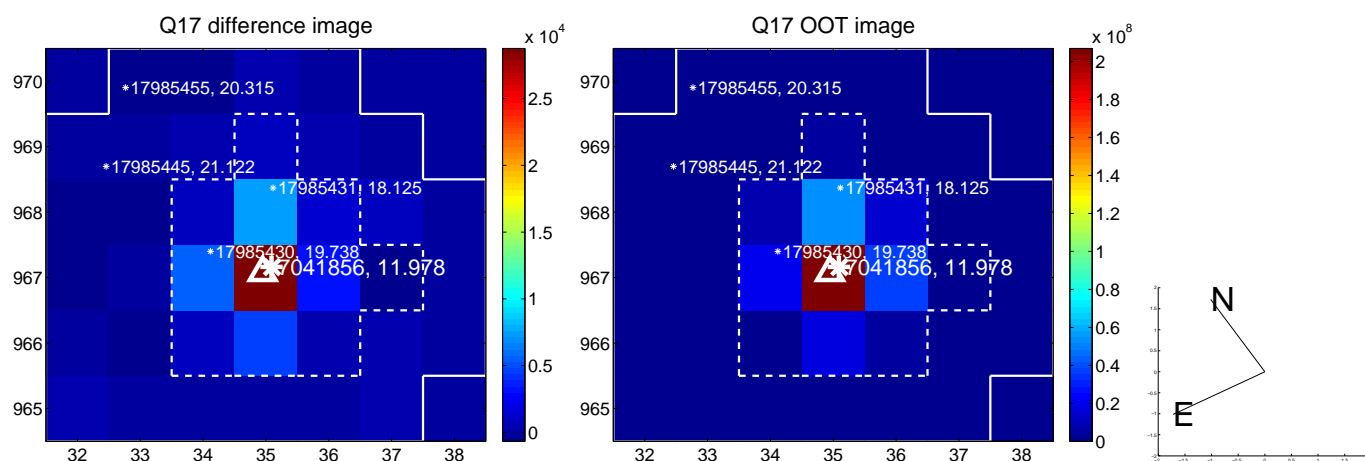
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

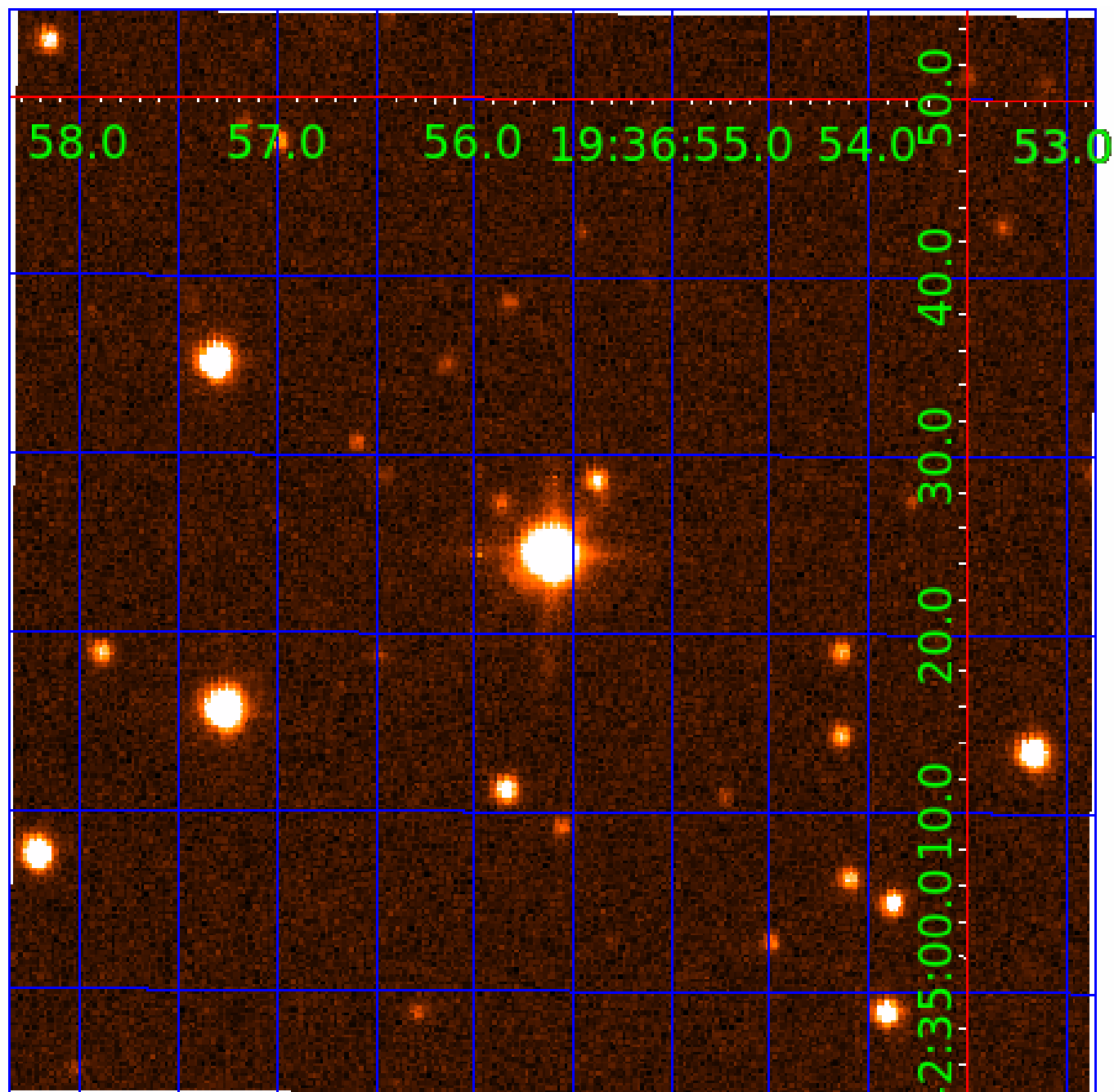


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



UKIRT Image

Declination



KIC 007041856

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
007041856-01	OBS	No	4.000645	134.708775	62.1	5.850	16.0	13.4	2.99	6908	3.16	5810.19
007041856-02	OBS	No	4.000334	133.783747	1.9	1.873	11.5	0.4	2.99	6908	0.41	5810.79
007041856-03	OBS	No	4.000424	134.162616	42.2	5.245	11.4	11.4	2.99	6908	2.27	5810.62
007041856-04	OBS	No	410.614935	301.222063	295.6	4.521	7.1	7.5	2.99	6908	6.11	12.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007041856-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007041856-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD
007041856-03	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
007041856-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

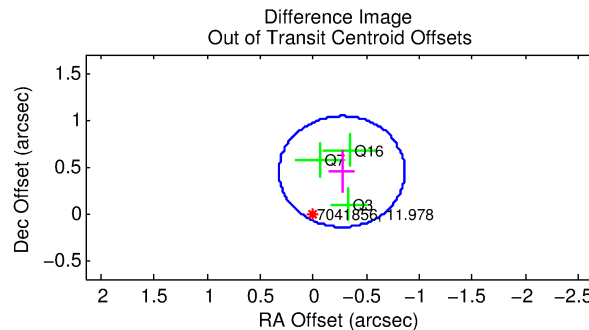
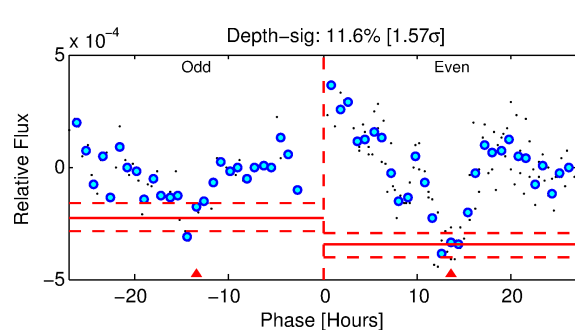
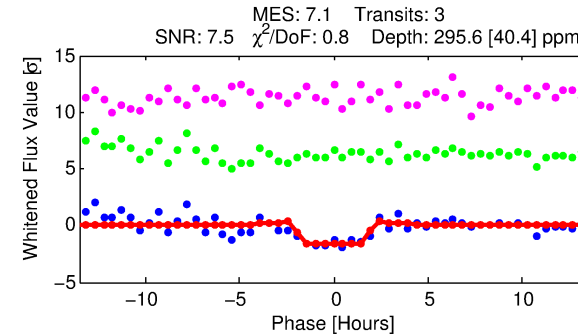
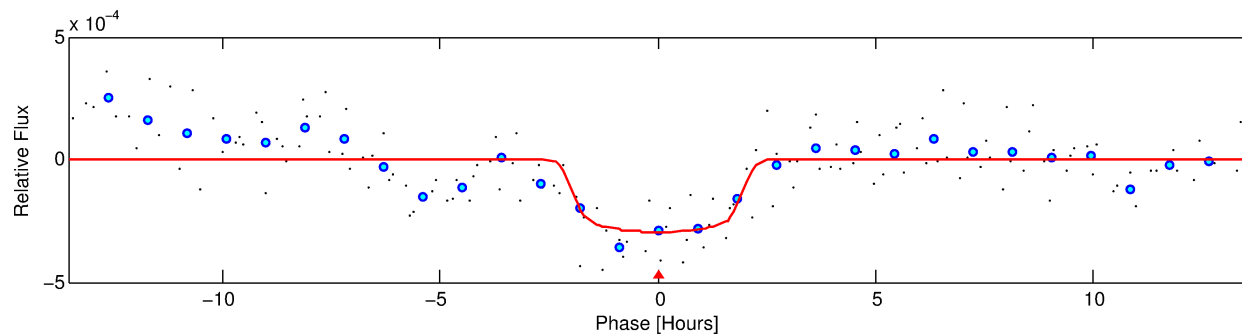
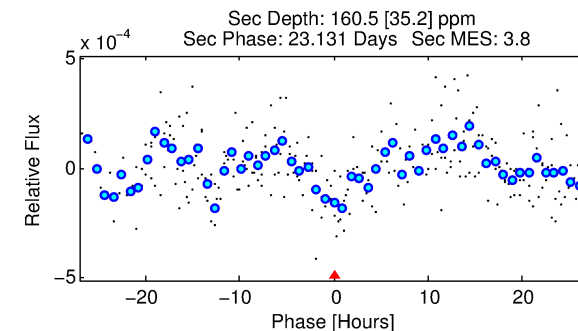
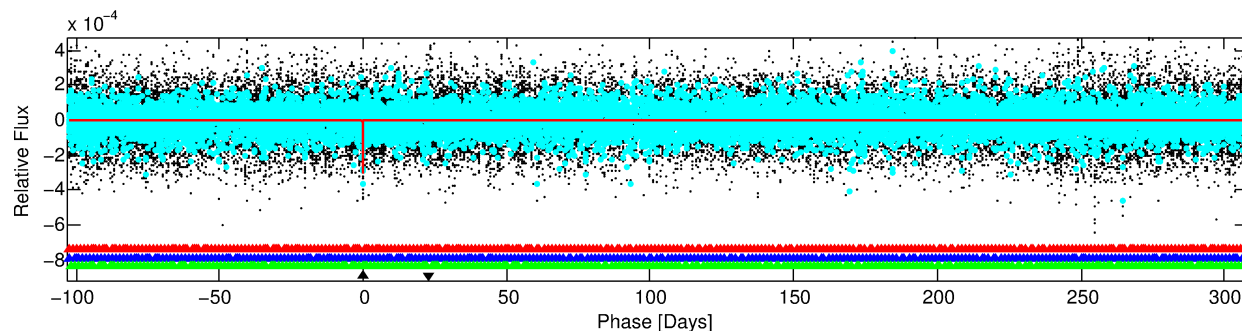
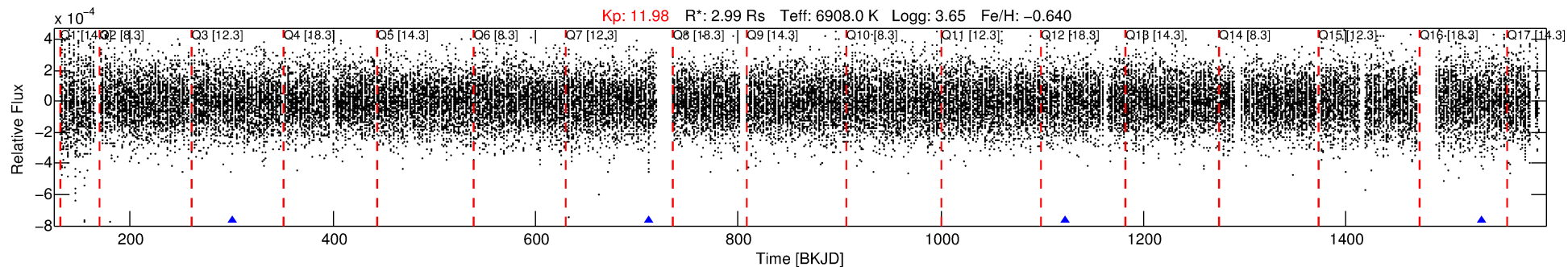
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007041856-04

No Significant Match Found

DV One-Page Summary

KIC: 7041856 Candidate: 4 of 4 Period: 410.615 d



DV Fit Results:

Period = 410.61494 [0.00359] d
Epoch = 301.2221 [0.0072] BKJD
Rp/R* = 0.0188 [0.0023]
a/R* = 293.90 [155.77]
b = 0.93 [0.08]
Seff = 12.09 [6.97]
Teq = 475 [68] K
Rp = 6.11 [2.39] Re
a = 1.2266 [0.4345] AU
Ag = 3558.68 [2318.71] [1.53σ]
Teff = 5678 [493] K [10.45σ]

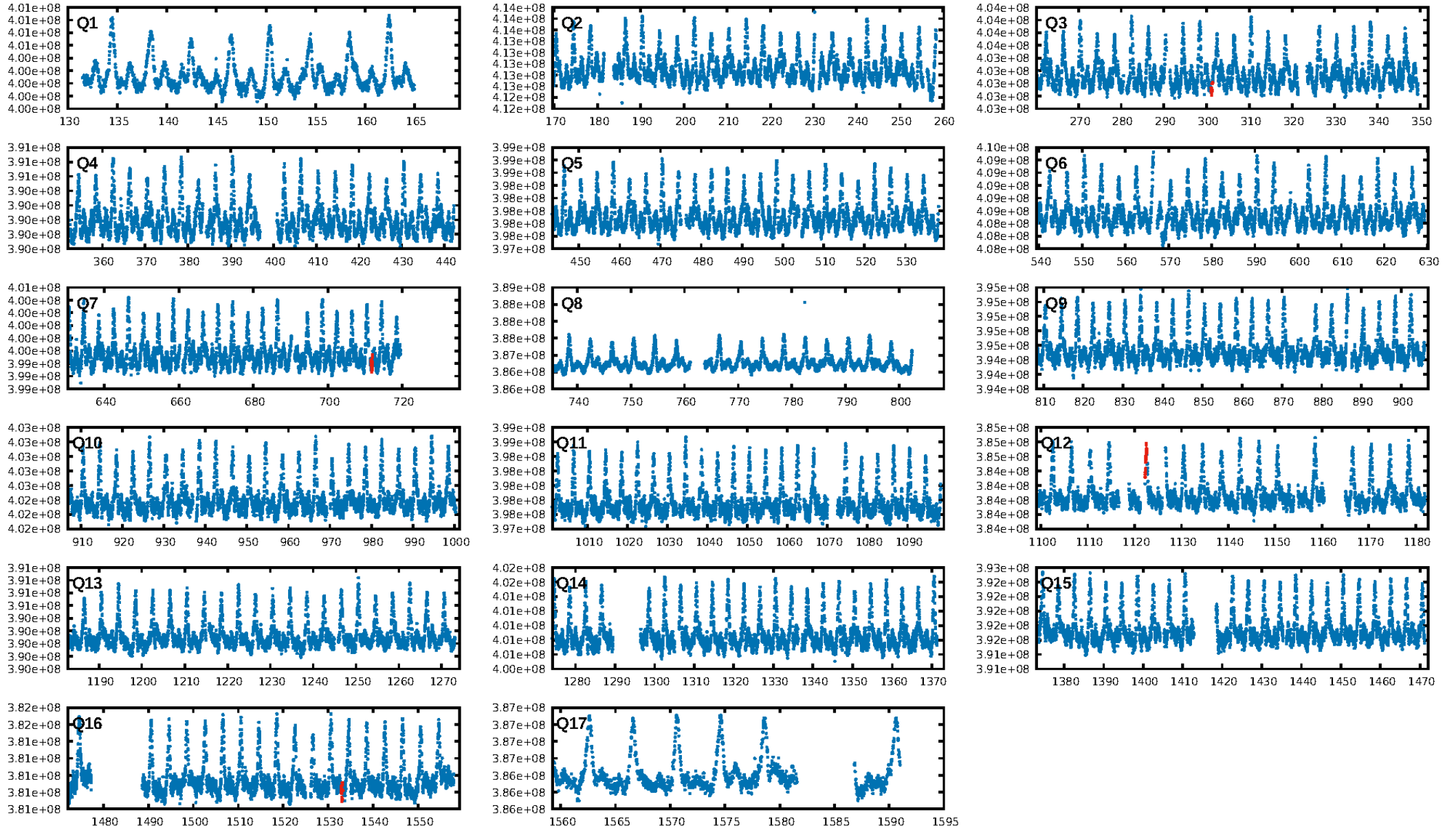
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1319.92σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 38.9%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 9.06e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.151
Centroid-sig: 7.4%
Centroid-so: 0.767 arcsec [1.56σ]
OotOffset-rm: 0.522 arcsec [2.64σ]
KicOffset-rm: 0.467 arcsec [2.69σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

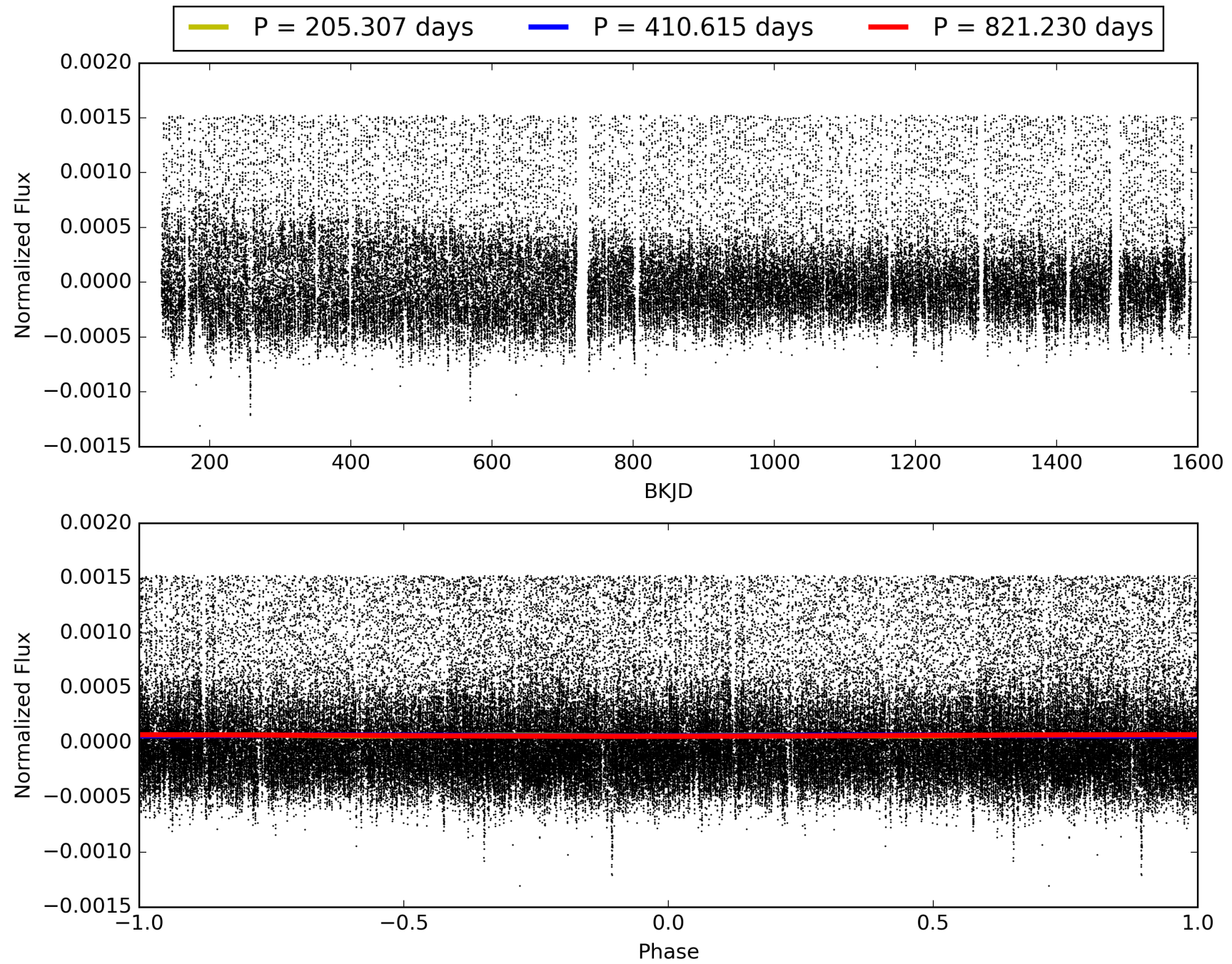
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:15:06 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007041856-04, PDC Light Curves

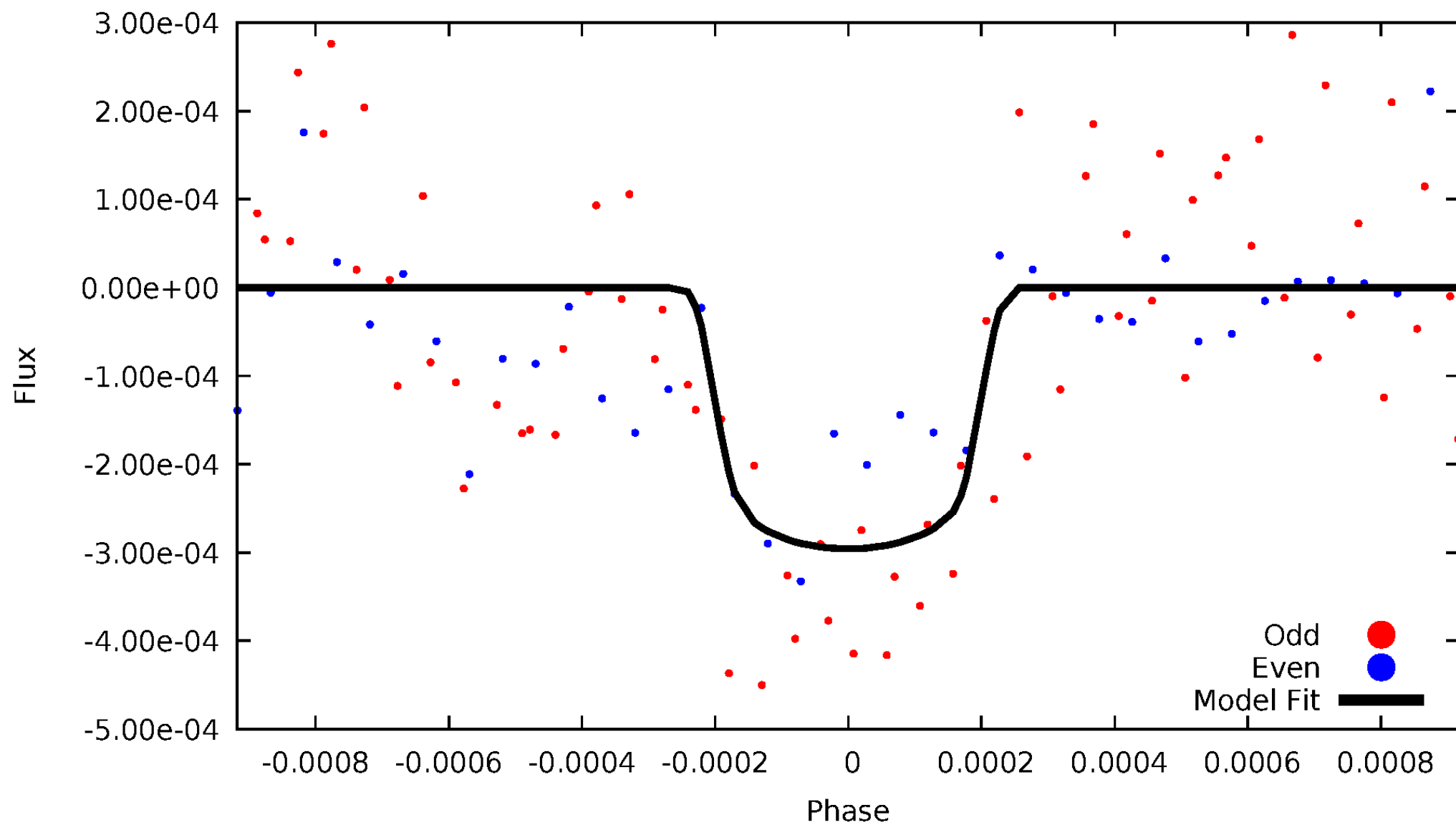


TCE 007041856-04



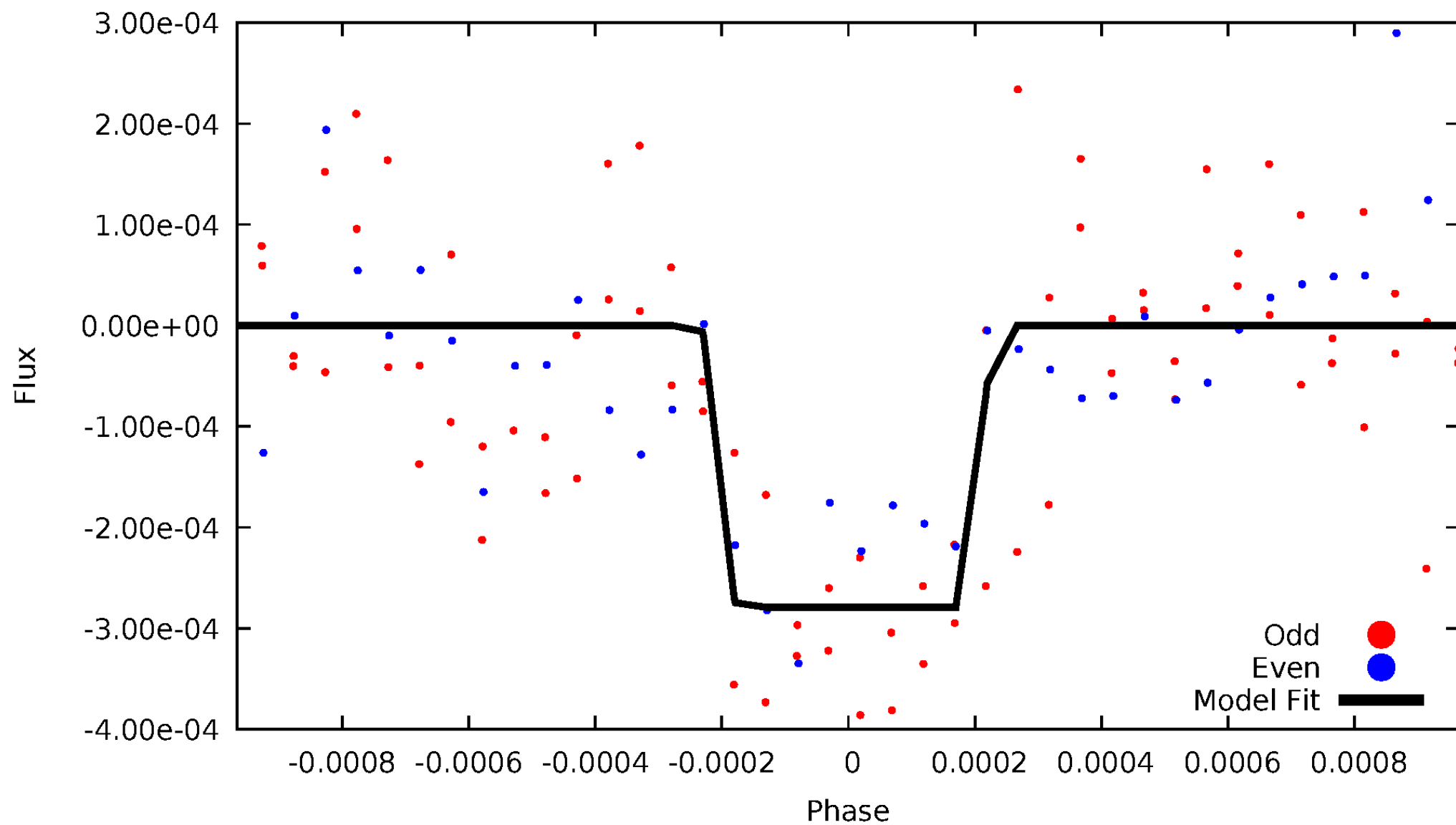
DV Odd/Even

TCE 007041856-04



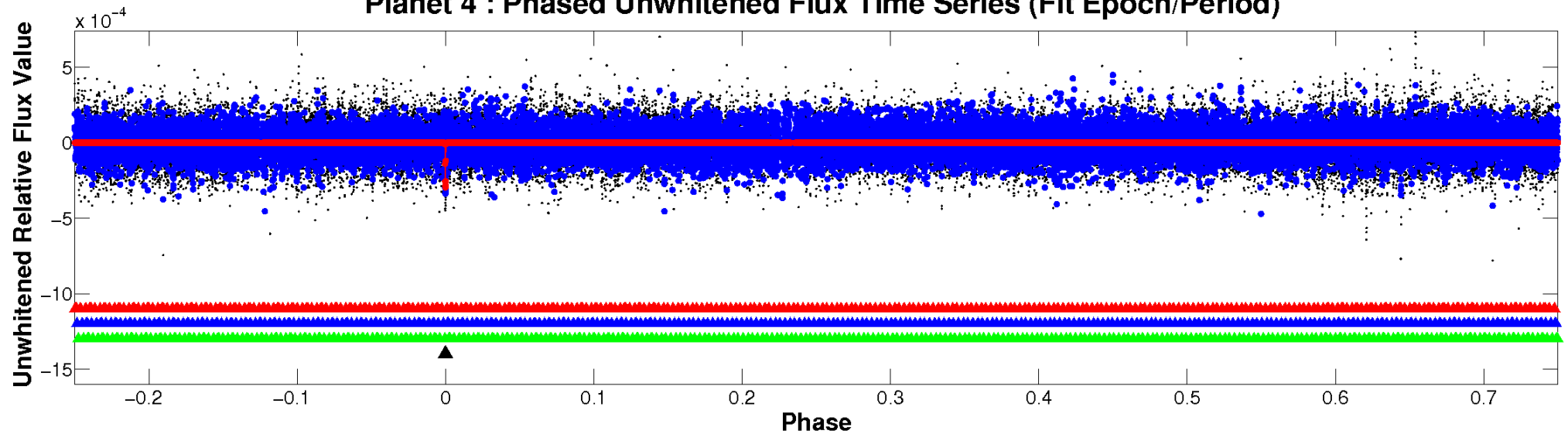
ALT Odd/Even

TCE 007041856-04

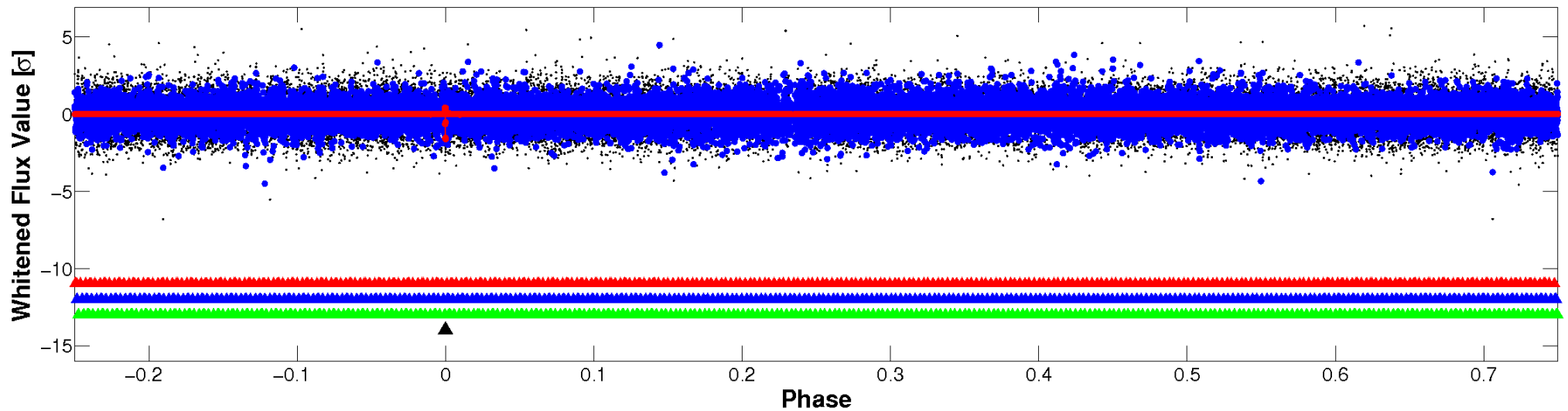


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

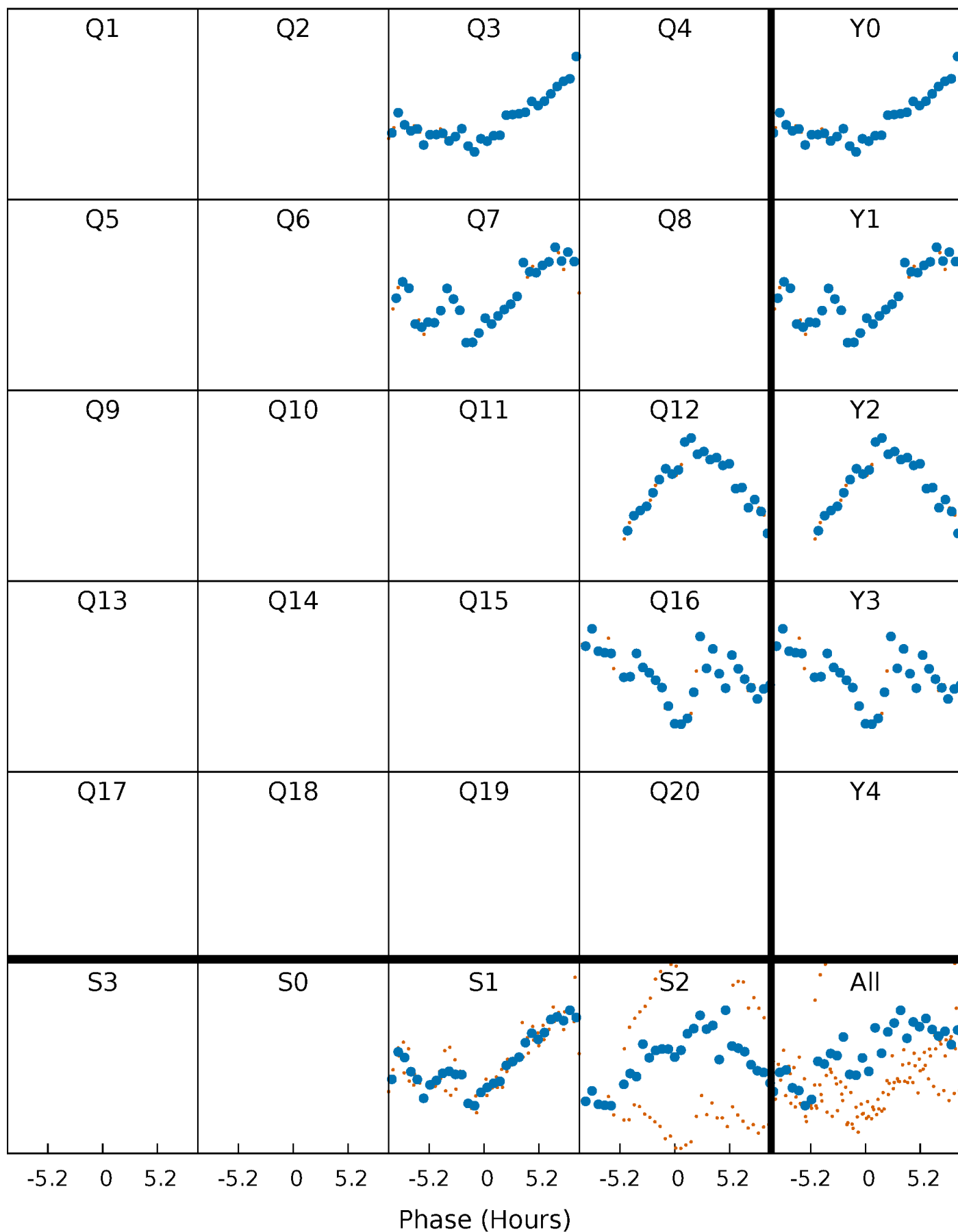


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



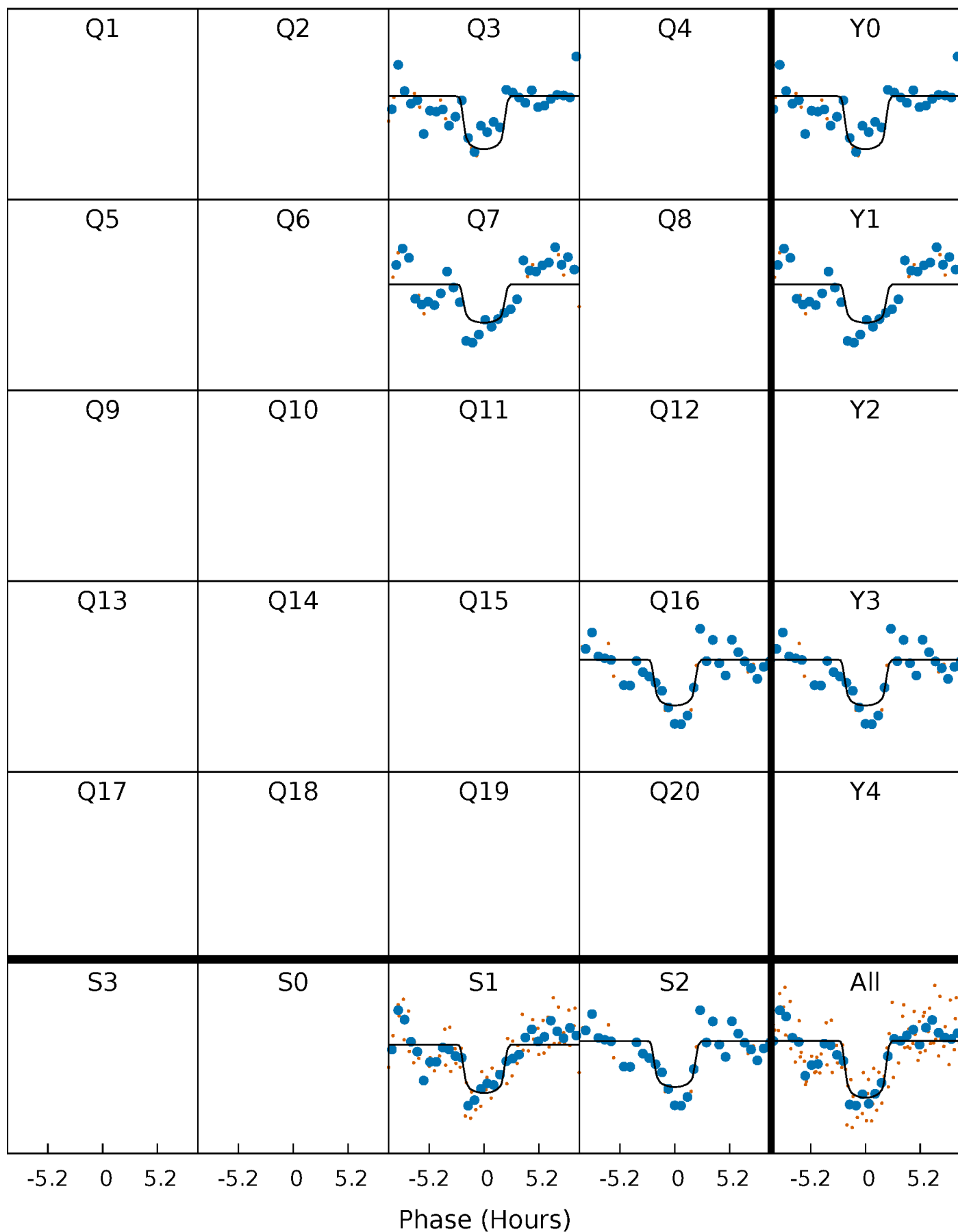
PDC Quarter-Phased Transit Curves

TCE 007041856-04 P=410.614935 Days $T_0=301.222063$ (BKJD)



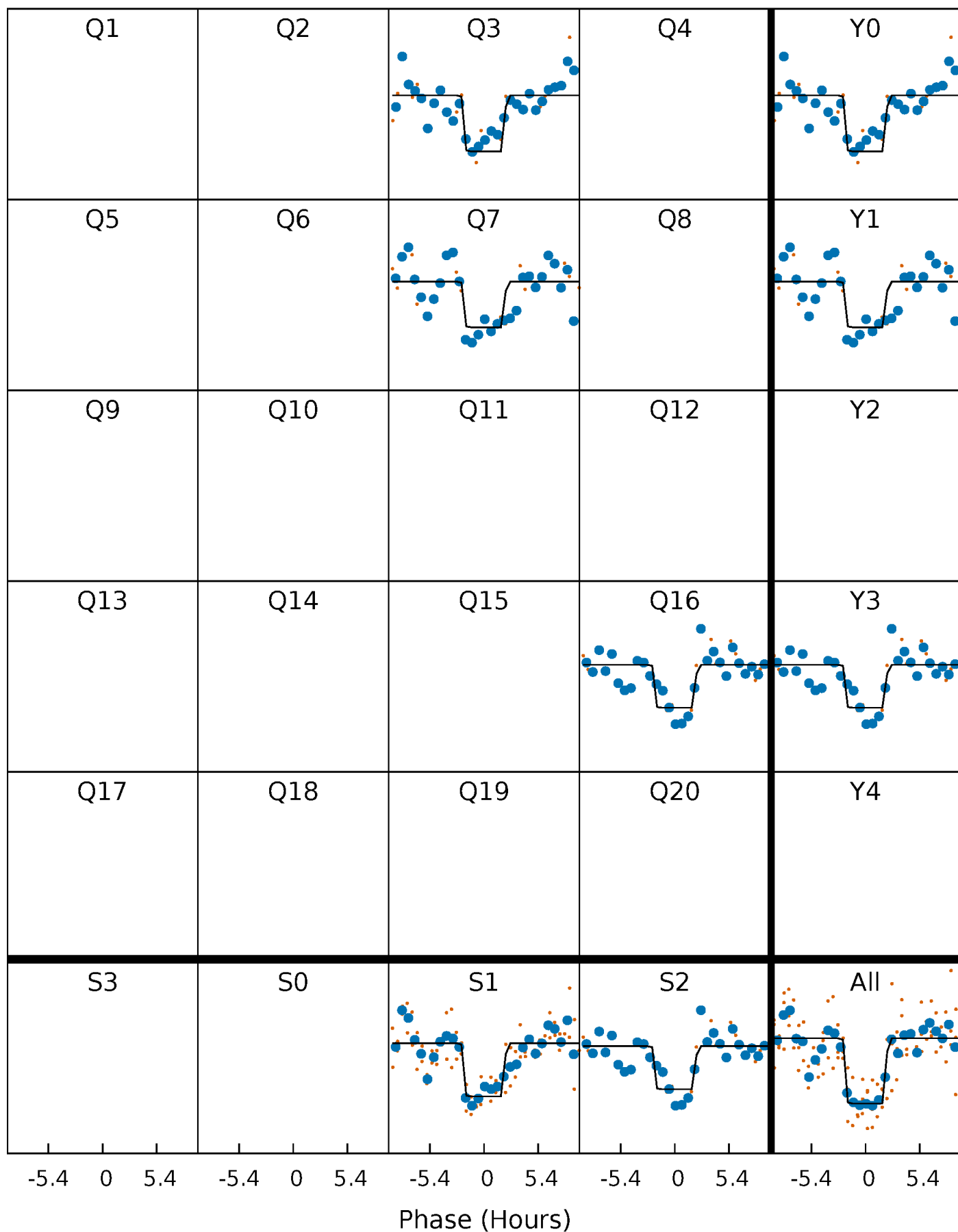
DV Quarter-Phased Transit Curves

TCE 007041856-04 $P=410.614935$ Days $T_0=301.222063$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

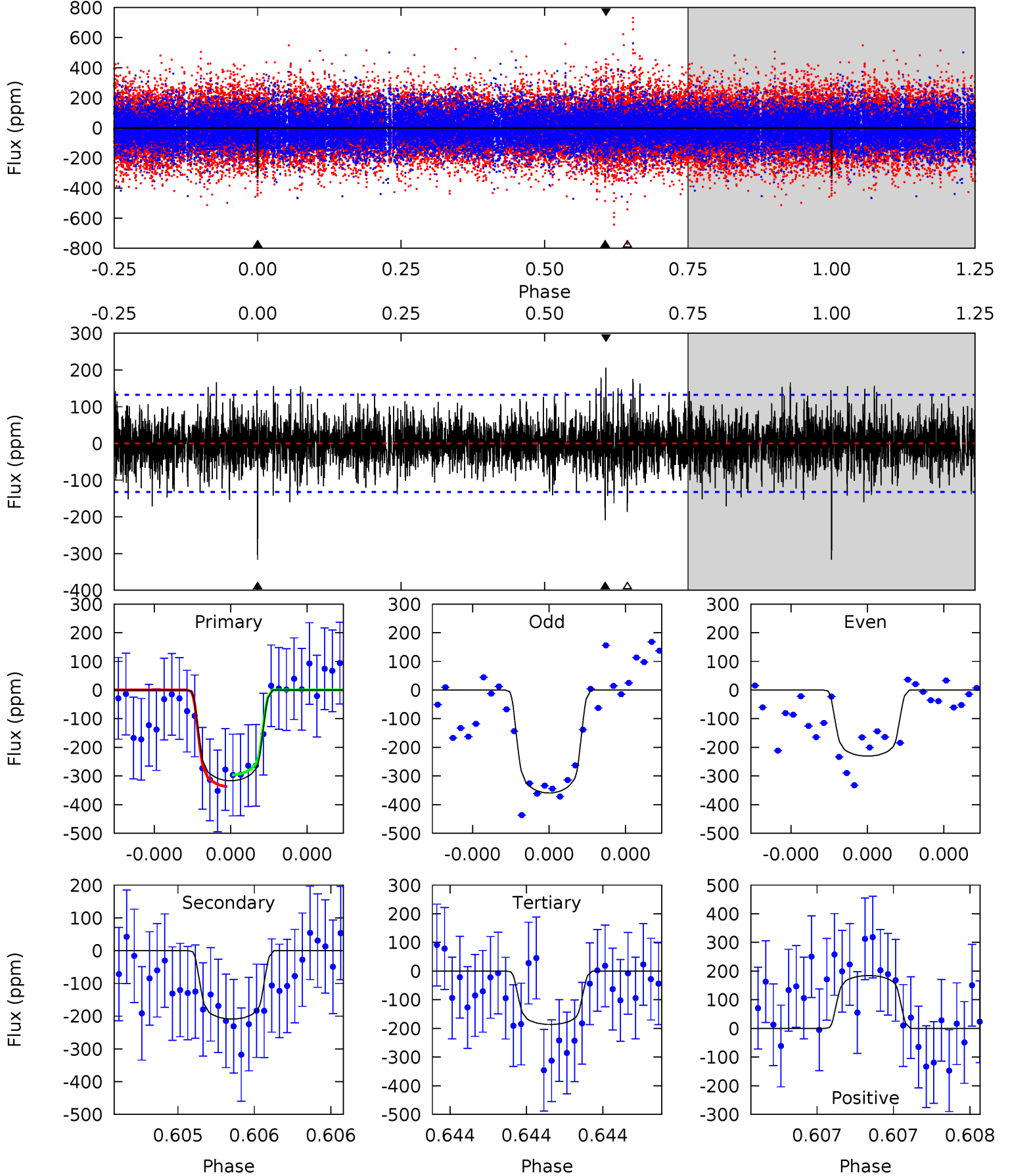
TCE 007041856-04 $P=410.612388$ Days $T_0=301.225192$ (BKJD)



DV Model-Shift Uniqueness Test

007041856-04, P = 410.614935 Days, E = 301.222063 Days

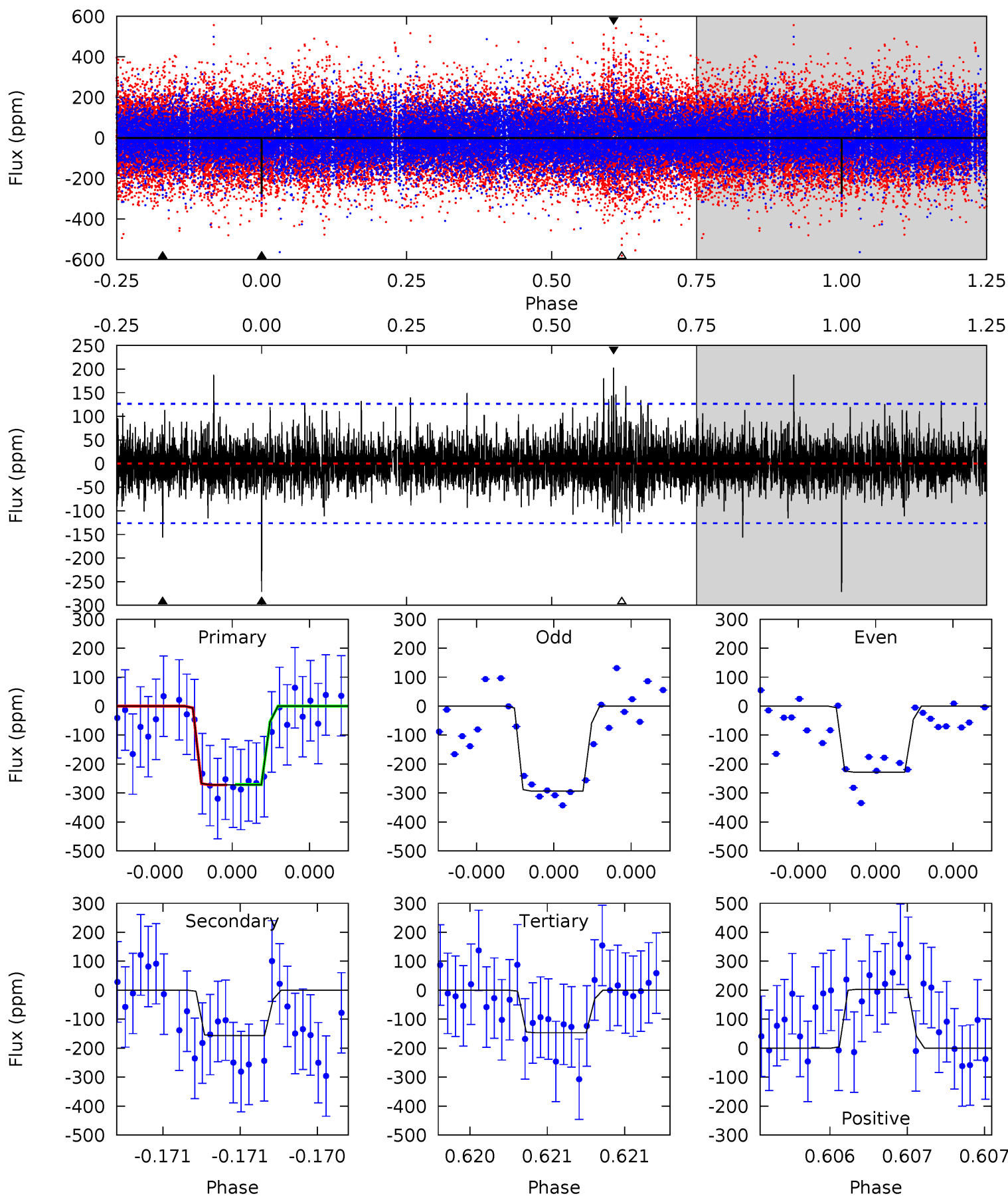
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	8.83	7.87	7.79	5.58	3.50	1.91	5.50	5.58	0.96	1.04	2.54	0.92	0.39	0.87



Alt Model-Shift Uniqueness Test

007041856-04, P = 410.612388 Days, E = 301.225192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	6.93	6.50	8.99	5.59	3.51	1.55	5.52	3.02	0.43	-2.06	1.39	0.97	0.43	0.04



Stellar Parameters For KIC 007041856

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6908^{+183}_{-204}	$3.652^{+0.330}_{-0.110}$	$-0.640^{+0.350}_{-0.300}$	$2.986^{+0.475}_{-1.109}$	$1.460^{+0.216}_{-0.324}$	$0.077^{+0.202}_{-0.021}$
	+3%/-3%	+9%/-3%	+55%/-47%	+16%/-37%	+15%/-22%	+262%/-27%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007041856-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-209 ± 24	$5.76^{+1.21}_{-1.27}$	650^{+43}_{-57}	6057^{+474}_{-412}	5233^{+3027}_{-1636}
Alt.	-157 ± 23	$5.24^{+1.00}_{-1.20}$	653^{+40}_{-62}	5928^{+552}_{-420}	4918^{+2727}_{-1626}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

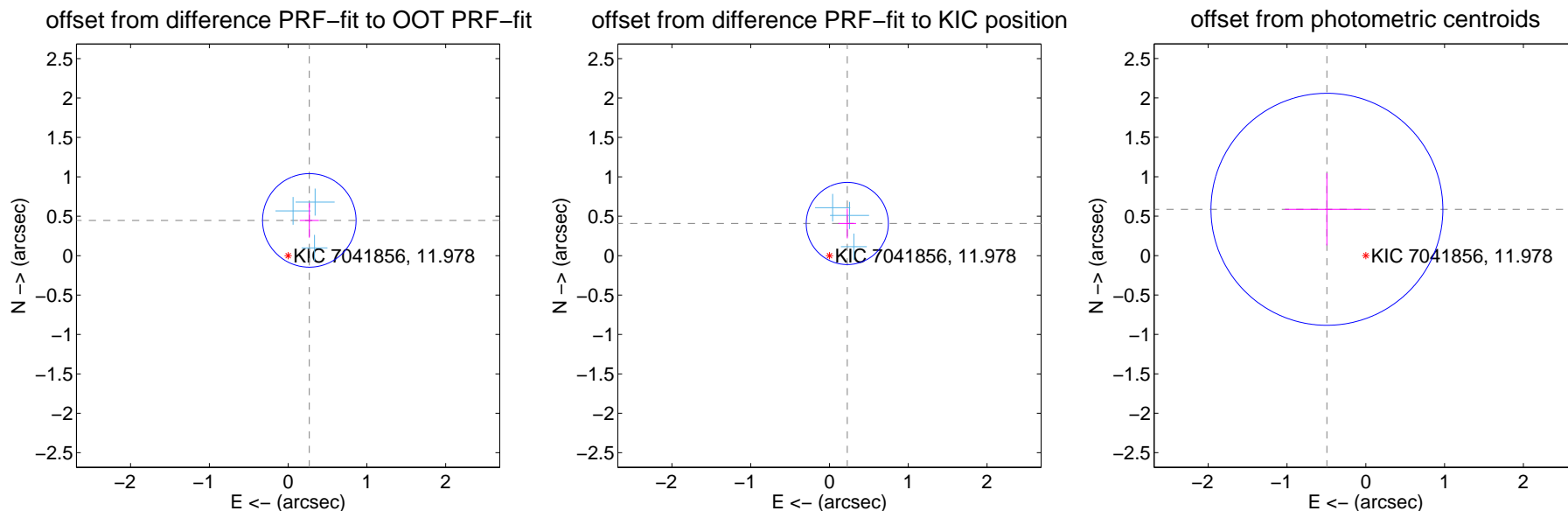
DV Centroid Data

Supplemental centroid analysis for 007041856-04. **Kepler magnitude: 11.98.** Transit SNR 7.53

There are 3 quarters with good PRF difference image offsets

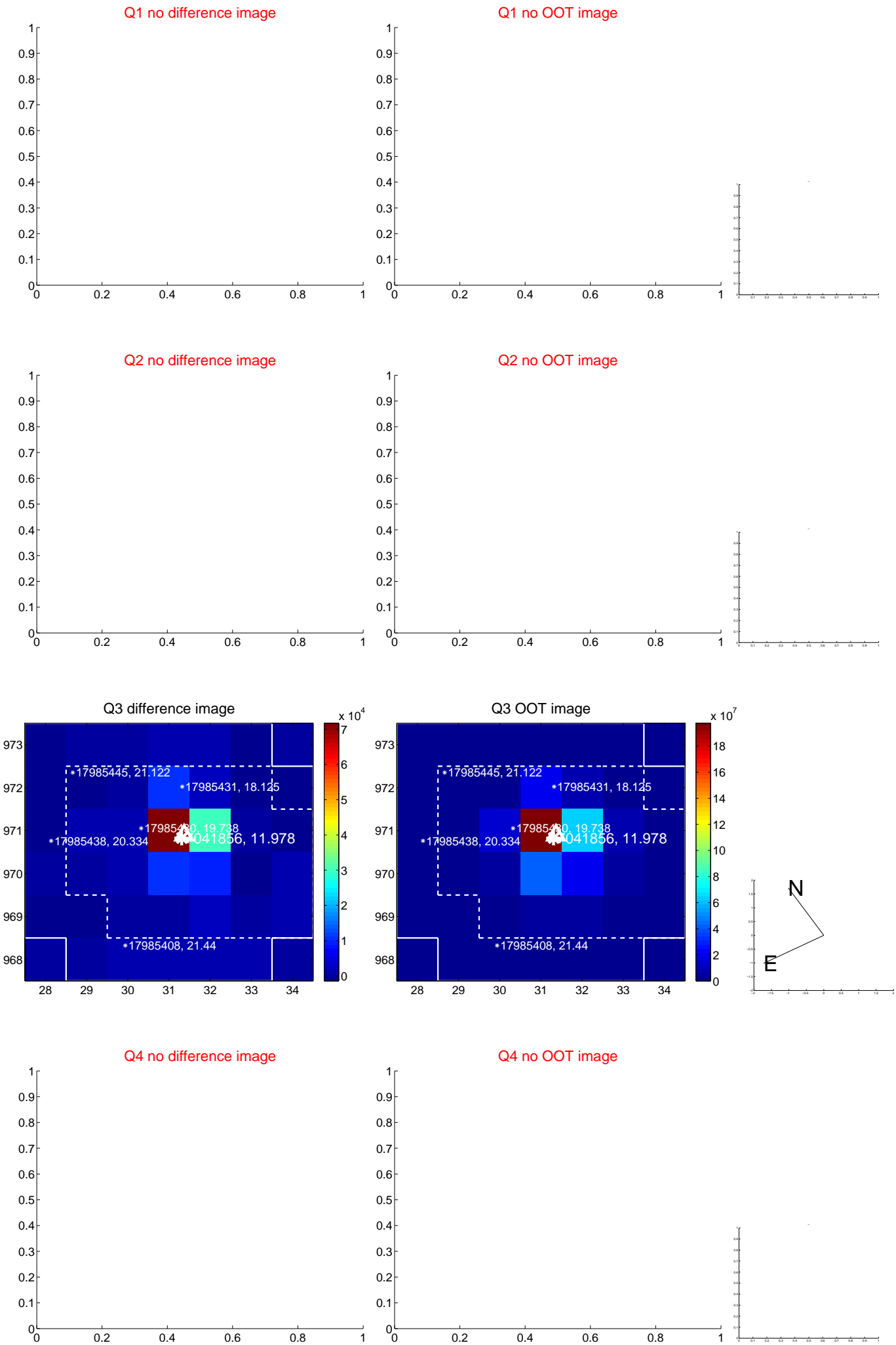
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.522 ± 0.198	2.64	-0.269 ± 0.122	0.447 ± 0.219
PRF-fit source offset from KIC position	0.467 ± 0.174	2.69	-0.226 ± 0.112	0.408 ± 0.189
photometric centroid source offset	0.77 ± 0.49	1.56	0.49 ± 0.53	0.59 ± 0.46

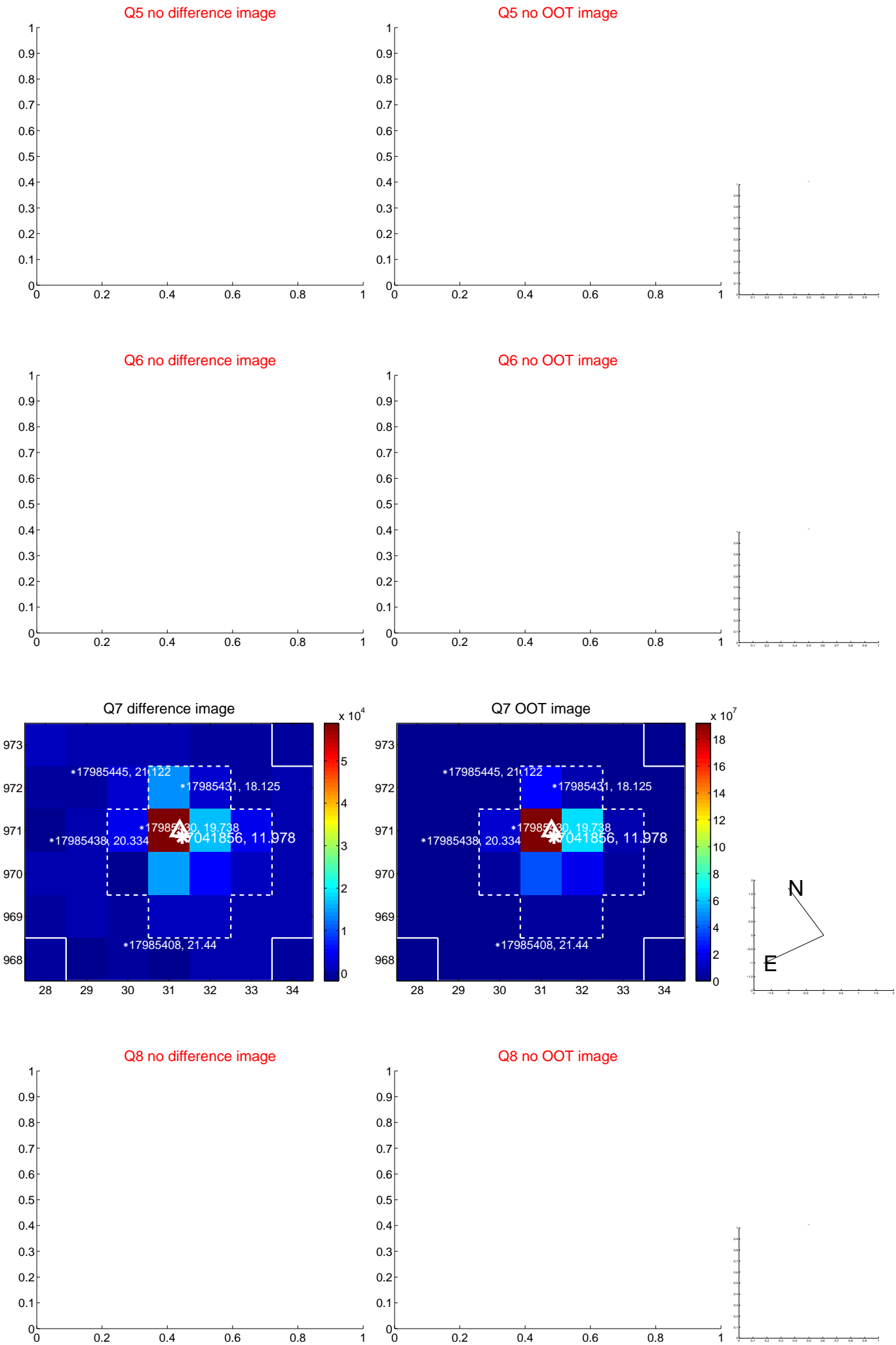


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



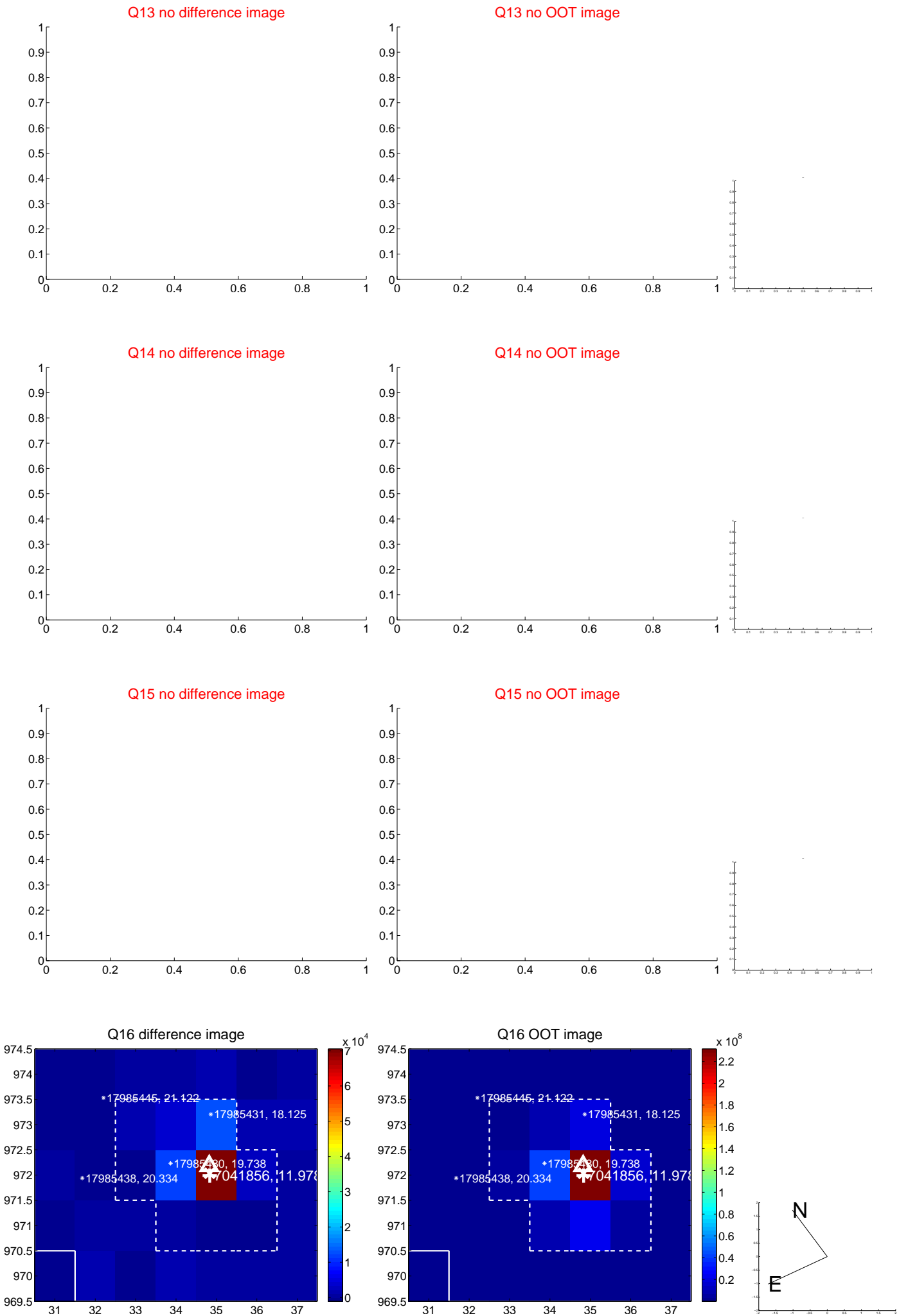
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



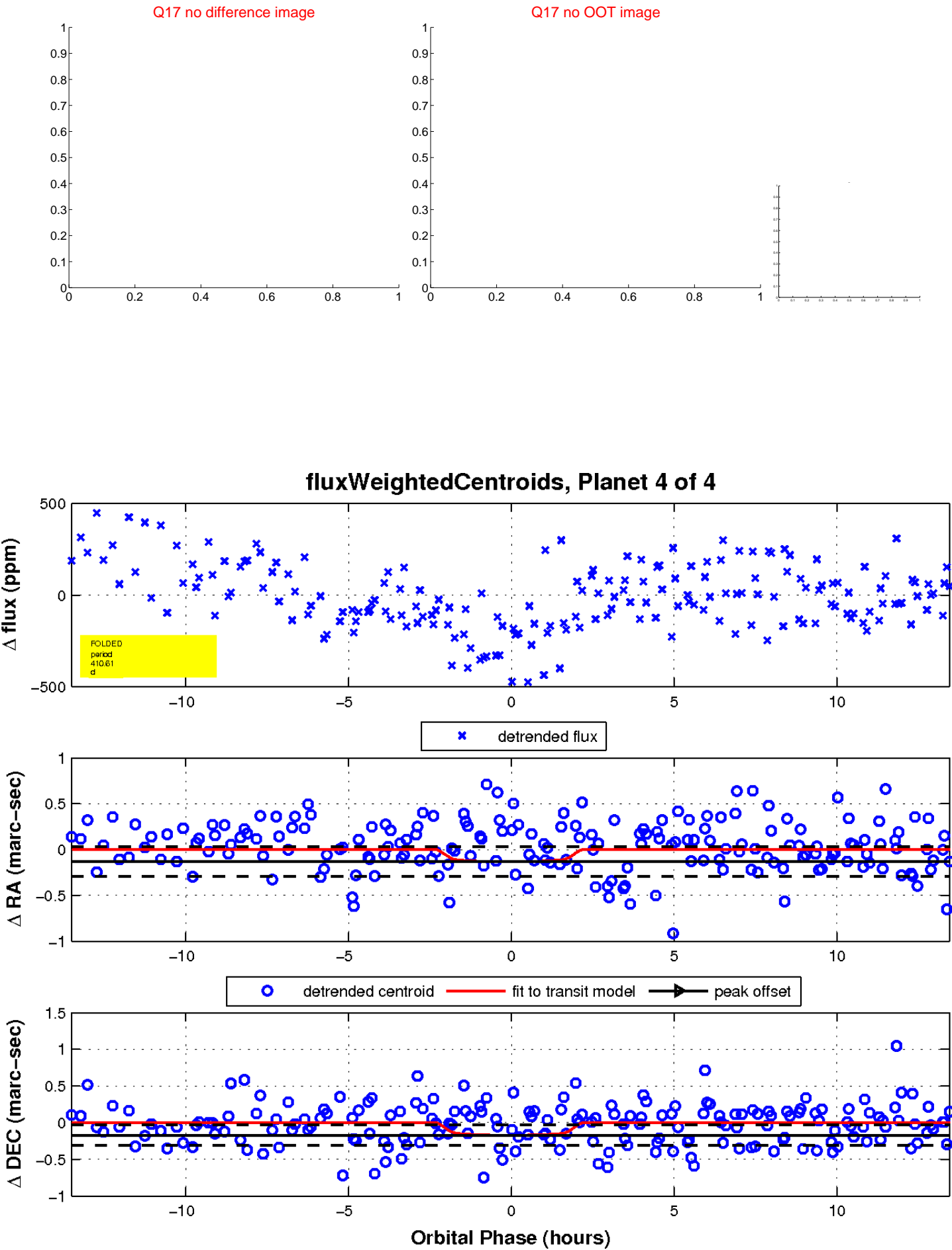
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

